The South African Textile Industry: Opportunities and Constraints with Particular Reference to Environmental Issues and Eco-Labelling

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IV. List of Acronyms

AAMA	American Apparel Manufacturers Association
AGOA	African Growth and Opportunity Act
BOD	Biochemical Oxygen Demand
BOP	Balance of Payments
BTTG	British Textile Technology Group
CA	Comparative Advantage
CLOFED	Clothing Federation
CLOTEX	Clothing and Textiles Federation
CMA	Common Monetary Area
COD	Chemical Oxygen Demand
COMESA	Common Market of East and Southern Africa
CP	Cleaner Production
CSIR	Centre for Science and Industrial Research
CTE	Committee on Trade and Environment (WTO)
CTF	Clothing, Textiles and Footwear
CTFL	Clothing, Textiles, Footwear and Leather
DANCED	Danish Co-operation for Environment and Development
DEAT	Department of Environmental Affairs and Tourism
DTI	Department of Trade and Industry
ELS	Environmental Labelling Scheme
EMS	Environmental Management System
EPA	(United States) Environmental Protection Agency
E-RATE	Exchange Rate
EU	European Union
FTA	Free Trade Agreement
GDP	Gross Domestic Product
GEAR	Growth, Employment and Redistribution
GATT	General Agreement on Trade and Tariffs
HSCR	Human Sciences Research Council
IP&WM	Integrated Pollution and Waste Management
ITC	International Trade Centre
ISO	International Organisation for Standardisation
JSE	Johannesburg Stock Exchange
KL	Kilo-Litre

LCA	Life-Cycle Assessment
MFA	Multi-Fibre Agreement
MRA	Mutual Recognition Agreement
NEMA	National Environmental Management Act
NGO	Non-Governmental Organisation
NPI	National Productivity Institute
NTB	Non Tariff Barrier
NTTTB	Non Tariff Technical Trade Barrier
NWMS	National Waste Management Strategy
OECD	Organisation for Economic Co-operation and Development
OT	Other Textiles (Statistical Classification)
RCA	Revealed Comparative Advantage
RvC	Dutch Council for Accreditation
ROW	Rest of the World
SAACB	South African Association of Certification Bodies
SABS	South African Bureau of Standards
SACF	South African Clothing Federation
SACTMA	South African Cotton Textile Manufacturers' Association
SACTWU	South African Clothing and Textiles Workers Union
SACU	South African Customs Union
SADC	Southern African Development Community
SANAS	South African National Accreditation System
SARS	South African Revenue Services
SATIEC	South African Textile Industry Export Council
SAP	Structural Adjustment Program
SETA	Sector Education and Training Authority
SME	Small and Medium Enterprise
SMME	Small, Medium and Micro Enterprise
SSA	Sub-Saharan Africa
SWF	Spinning, Weaving and Finishing (Statistical Classification)
TEXFED	Textile Federation
TITB	Textile Industry Training Board
TNC	Trans-National Company
TSS	Total Suspended Solids
TTB	Technical Trade Barrier
UCT	University of Cape Town
UN	United Nations

UNCTAD	United Nations Conference for Trade and Development
UNEP	United Nations Environmental Program
UND	University of Durban-Natal
WM	Waste Minimisation
WRAP	World-Wide Responsible Apparel Programme
WRC	Water Research Commission
WTO	World Trade Organisation
ZAR	South African Rand

1. Abstract

The South African Textile Industry: Opportunities and Constraints with Particular Reference to Environmental Issues and Eco-Labelling

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The aim of this thesis is to analyse and highlight the key issues facing the South African textile industry as it attempts to re-align itself, from an industry that operated in a highly protected manufacturing and policy environment, to an industry confronted with globalisation, increased competition, improved foreign market access and important environmental issues.

Critical challenges facing the South African textile industry, and that in many other developing and developed countries, include the increased need for international competitiveness, the integration of environmental issues with trade aspects, and the potential impact that non-tariff trade barriers may have on the textile production pipeline. Trade patterns and value chains in the 21st century will not necessarily resemble those of the past century. Tariff barriers are increasingly giving way to technical or non-tariff barriers, and there is a growing emphasis on environmentally preferable production methods, especially in the developed world. This has important consequences for developing countries like South Africa, and presents specific challenges and opportunities.

2. Introduction, Hypothesis and Structure

2.1 Introduction to this Research

The textile manufacturing industry is one of the most widely distributed industries in the world. Very few countries are without a domestic textile industry sector. In many countries this industry plays a very important role, not only in terms of its contribution to economic output, as a vehicle for economic growth and development, and as a provider of employment, but also as a vitally important consumer of goods and services from upstream and parallel industries, and as a supplier of goods to downstream industries.

In South Africa the textile industry may not exactly be the backbone of the economy, but it is nevertheless an important industry. Over 60.000 people are directly employed in the South African textile industry (and a multiple of this indirectly dependent on the textile industry in related industries), and it produces a gross output of over R10 Billion. Having spent years in relative isolation behind protectionist barriers, the South African textile industry has, in recent years, been hard hit by the increasing globalisation of trade. It has been shown to be largely uncompetitive in some market segments, especially at the "lower end" of the market that involves the manufacture of largely commodity-type textiles. On the other hand, the industry has shown some resilience in the higher value-added market segments, and there is strong evidence that it is beginning to capture increasing export market share. It is therefore vital that new strategies are embraced which will assist the industry in moving up along the "value chain", thus helping sustain it into the 21st century.

Of particular importance are environmental concerns. Environmental issues are having, and will continue to have, a significant impact on the international textile industry. In integrating with the rest of the world, the South African textile industry needs to take international trends into account to ensure long-term sustainability. With this in mind, this thesis seeks to provide a detailed analysis of the South African textile industry, and explore options that will allow it to take advantage of new opportunities, more particularly in relation to confronting the challenges of globalisation in general and environmental concerns in particular.

2.2 The Concept of Value Chains with Regard to the South African Textile Industry

One of the ways of looking at industry structure is in terms of *value chains*. Since a common thread throughout this thesis is the notion of "value adding", it is important to briefly outline the notion of value chains, especially with regard to textile manufacturers.

Value chains describe the entire chain of productive (value-adding) activities of a product, from raw material extraction to final end-use. In other words, value chains incorporate aspects of production, distribution (i.e. logistics and marketing) and consumption. Value can be added at each production stage,

and increasingly this value-adding emanates from activities involving information and communication technologies, efficient logistics and the integration of business processes (DTI, 2001). The concept of value chains originates in the 1960s and 1970s, when analysts used it to describe the path of development by mineral-exporting economies. However, its recent prominence as an analytical tool arises from the work of Michael Porter (Kaplinski, 2000).

Value chain analysis provides a means of showing where value is created along a product's manufacture, distribution and end-use. Countering a traditionally held view that value is mostly created in the manufacturing process, it shows that in many instances value is predominantly added through a sequence (and combination) of activities encompassed within design, marketing, and logistics networks. Value chain theory also recognises that in many instances the aforementioned chain of activities is located in various different locations at any one time. This is particularly true for the textile-clothing pipeline.

There are a number of different dimensions to the value chain concept, highlighted amongst others by Gereffi (1994), Sturgeon (2000), Gibbon (2000), Humphrey (2001) and McCormick and Schmitz (2001):

- *Input-Output Structure / Organisational Scale:* Value chains consist of five generically different flow stages, namely design, inputs, production, wholesale and retail, with the latter including the consumption stage of the product life cycle. As highlighted above, the knowledge inputs (i.e. during design, marketing, logistics etc.) can, and frequently do, far exceed the material inputs.

- *Geographic Spread / Spatial Scale:* While some value chains have a truly global dimension, others may involve only a few locations in different parts of the world. For example, a US company may design a garment, contract a South African textile manufacture to supply fabrics to a CMT garment manufacturer in Lesotho, who in turn ships the output back to the US retailer.

- *Control over Activities /Internal Governance Structure:* The third dimension concerns the control that various actors can exert over the value chain. Different configurations of control are possible. These include producer-driven value chains, 'balanced networks' where no firm (or group of firms) exercises *undue* control over the other actors, and 'directed networks' (or buyer-driven value chains), whereby firm networks are controlled by certain (global) lead firms. The lead firms to a significant degree control product specifications and spatial aspects of production.

With reference to the latter category, producer-driven value chains are generally found in capital and technology-intensive sectors, such as the automotive, heavy machinery and computer industries (Gibbon, 2000). In these industries, proprietary technology and know-how constitute defining barriers to entry, and the value chain tends to be co-ordinated mainly by large, multinational corporations. Buyer-driven value

chains, on the other hand, are usually found in industries where design and marketing play an important role, but production is relatively labour intensive. Examples include the textile-clothing industries and the footwear industry. Here barriers to entry relate around investments in design, market information, branding and advertising, and result in these value chains being led by large merchandisers of branded output and retail chains (i.e. those players with significant control over design and marketing aspects) (Gibbon, 2000). Leading firms in demand-driven value chains exercise a decisive influence over global value chains, without them taking direct control of large parts of the production process (Humphrey, 2000).

The concept of value chains is important for South African producers, especially in the light of the reduction of tariff-based trade barriers, and improved market access brought about by trade agreements (notably with the EU and US). Extending access to South African textile manufacturers to their traditional export markets does not automatically translate into increased sales, since many value chains into the EU and US markets are *directed* chains or networks. This means that in order to participate in these supply networks, South African producers (in the textile and clothing industries) need to obtain access to these value chains' international lead firms (such as *The Gap* etc.). Their ability to dominate often results from their strengths in competencies such as design, branding, marketing etc., which command high returns and are thus dominant value-adding activities. Producers in many developing countries, including South Africa, often tend to be locked into pure manufacturing activities, frequently manufacturing to the specifications (or perceived direction) of lead firms in their network. Since competition in the textile segment is intense, and *production* can be undertaken by a large number of different producers, returns are often low and economically unsustainable in the long run (McCormick and Schmitz, 2001).

The challenge faced by South Africa, and many other emerging economies whose background to economic development is resource-oriented, is to ensure that domestic economic opportunities are developed and successfully integrated into both domestic and trans-national value chains (DTI, 2001a). With regard to the South African textile-clothing pipeline, the government's manufacturing strategy recognises the importance of these sectors, and the role of value chains in these industries. In this instance, eco-labelling (and its associated value-added and compliance with international standards) may prove to be a valuable tool in assisting with the integration of South African textile and clothing firms into global value chains, especially since eco-labelling to some degree anticipates the needs of consumers and retailers.

2.3 Previous Research Project and Background to the Thesis Research

The fact that the economic performance of the textile industry in South Africa has been weakening over the years, and that the industry is in need of restructuring and re-focussing, were important considerations for conducting the research for this thesis.

Previous Research Project:

This thesis to some extent builds on previous research conducted within the South African textile industry as part of a research project entitled ***'Improving the Environmental Performance of Small and Medium Sized Manufacturing Enterprises in South Africa – Opportunities for Co-operative Approaches'*** (*Note* [1]).

This project was commissioned and funded by the Canadian *International Development Research Centre* and, in part, by *SANPAD* (South Africa-Netherlands Research Programme on Alternatives in Development). The project focused on two industry sectors, namely the textile industry and the metal-finishing industry. One of the project's express aims was the desire to "explore the structural, operational and institutional impediments to the improvement of the environmental performance of small and medium scale enterprises, which have been identified as strategic players in the economic development of Southern Africa" (Environmental Process Engineering Group, 2000).

With regard to the textile industry, the specific objectives were:

- To study, in specific companies, the willingness, intent and capacity of management to initiate and apply environmentally preventative behaviour;
- To investigate the effect of the economic situation of particular companies as a factor influencing their ability to improve environmental performance, and to characterise the economic situation of industry sectors at large in order to extrapolate findings into the economy as a whole; and
- To characterise the significance of the position of a company in a larger production system as a determinant for that company's ability to effect improvement in its own operation and in the system at large.

The project required that research be conducted in a number of case-study companies, which were representative of the textile industry in South Africa. Many firms were of the belief that improvements in the environmental performance would negatively affect the "bottom line", in other words, that the "environment costs money". One of the singular achievements of the project was to demonstrate, utilising a conceptual framework that included concepts such as 'industrial symbiosis', 'shared savings' and 'industrial networking', that the converse was indeed true: environmental performance improvements were highly likely to lead to financial rewards, as well as benefiting the company by being in compliance with those sections of the law relating to the environment.

Thesis

The background information on the previous project is important in the sense of explaining the context in which this thesis was completed. As a natural extension to the previous research, and bearing in mind the

[1] The project also concerned the metal finishing industry, but this thesis is deals solely with the textile industry

inter-relatedness and inter-dependencies between the environmental and economic performances of the textile industry, this thesis focuses on the textile industry with specific reference to certain environmental issues. An analysis of the economic performance of the textile industry, and the impact of globalisation, showed that this industry was largely ill-equipped to be internationally competitive. It was also shown that, while numerous free trade agreements may improve global market access and opportunities for domestic manufacturers of textiles, environmental issues and other technical trade barriers are increasingly posing a barrier to the realisation of this more liberal market access. The use of eco-labels is a specific tool identified as a means to not only improving the environmental performance of the textile industry, but specifically for helping ensure market access, especially in South Africa's traditional markets abroad. The increasing accessibility of the domestic market to foreign competition is necessitating greater competitiveness of South African producers not only in their own 'back-yard', but also internationally.

2.4 Hypothesis

The thesis analyses the core issues facing the South African textile industry, and investigates various options available to the industry.

The main question can therefore be formulated as follows:
"What is the potential, need and likelihood of the South African textile industry restructuring and re-focusing towards greater value-added production, export and niche markets, with an emphasis on overcoming likely non-tariff technical trade barriers through the application of sound environmental criteria and environmental labelling ('eco-labelling')?"

The assumption behind this question is the fact that the South African textile industry is and will be exposed to foreign competition on an increasing scale. This is especially likely in the lower end of the market, where the South African textile industry appears to be incapable on the whole of competing in the long term. Low productivity and inefficiency in production are reducing the industry's competitiveness, especially in the production of lower-value-added output and 'commodity-type items. A strategy is required that places greater focus on innovation, allows the textile industry to differentiate and compete according to its strengths and competitive advantage.

2.5 Approach

Both primary and secondary data was used in conducting the research for the thesis. The research for the thesis builds on prior economic research conducted by the writer in both the South African textile and metal-finishing industry within the confines of the previous research project alluded to earlier.

Research for this theses included theoretical (desktop) research as well as information gathering through various means of personal communication. Empirical research relied on a variety of information media and resources, including statistical releases, online resources (internet), newsletters, textbooks, manuals, industry publications, government publications and so forth. In particular the internet, and the electronic linking of research institutions and libraries, has allowed a more efficient means of data collection. Personal communication entailed meetings with a number of important industry stakeholders, and / or direct telephonic or e-mail contact. A wide range of meetings and discussions were held with textile (and some clothing) company representatives, industry organisations, academic research institutions, specialist consultants, non-governmental organisations and national government representatives, both to obtain primary and secondary data, as well as to verify previously obtained data.

2.6 Thesis Structure

The thesis first analyses the South African textile industry and identifies the major stakeholders in the context of the total manufacturing sector. This is followed by an in depth analysis of the textile industry, including issues such as the locational characteristics, output, types of activity, employment characteristics, investments and production capacity utilisation. One of the core issues, that of trade performance and the changing trade environment, are focused on next. The ensuing sections analyse the wider textile pipeline, placing the industry in the context of upstream raw material producing sectors, and the downstream clothing sector. The sections up to this point effectively lay the basis for the next part of the thesis, which focuses on the environmental issues in the textile industry, and the opportunities and challenges in relation to not only overcoming these challenges domestically, but particularly in the international trade context. The identified threat of environmental issues becoming major technical trade barriers in the textile industry, which is known for its contribution to pollution and widespread use of potentially harmful substances, is analysed here. The specific focus in this part of the thesis is on eco-labelling, although other options (which may lead to overcoming market access restrictions) are also dealt with here. The recommendations and conclusions at the end of the report sum up some of the core issues, especially those pertaining to the textile industry and the environment, and highlight some of the policy issues available to the industry and the Government.

3. Executive Summary

There are a number of key issues facing the South African textile industry as it attempts to re-align itself, from one that operated in a highly protected manufacturing and policy environment to one that has to deal with the impact of globalisation, increased competition and important environmental issues. These are no longer stand-alone factors that the textile industry has to contend with; they are intricately interwoven and interdependent.

This thesis analyses the South African textile industry in the context of the overall manufacturing sector, and particularly in the international arena. A brief overview of the manufacturing sector reveals that the textile industry continues to have an important role to play, especially in the regions where it is concentrated. Evidence has shown that the textile industry in South Africa is under considerable pressure. Formal employment has decreased by almost 50% over the last decade, and sales output in real terms has been declining steadily. A number of factors have contributed to this. The most significant factors are: inefficient and overpriced factors of production and input materials, an aged capital stock, the resultant un-competitiveness of the industry (especially at the lower end of the market) and the strong penetration of the domestic textile market, especially by illegal imports. Liberal labour laws are often perceived to favour workers over employers, making the South African labour market inflexible and unresponsive to the changing operating environment. A general lack of focus on training has resulted in high per-unit labour costs and a low-productivity workforce. Relatively high real interest rates, coupled with low business confidence, have lead to the erratic replacement of capital equipment compared to what would be required for the industry to accord with international best practice.

Notwithstanding the many factors counting against the textile industry, its trade performance over the past few years has shown significant improvement, with exports growing at a greater rate than imports. While South Africa is a net importer of textiles, the textile trade deficit has been shrinking, and now only accounts for slightly over 10% of total sales. A closer analysis of this trade performance shows that the South African textile industry has achieved increasing export market penetration in its traditional, developed markets (in particular Europe and the United States). The analysis also reveals that the low-cost producing countries of the Far East, most notably China, Taiwan and Indonesia are successfully growing their sales to the South African market. In many cases, the imported cost of a textile article is lower than the domestic price of the raw materials used in its manufacture.

Many of these imported products are typically commodity-type items that are largely undifferentiated, a category that South African textile manufacturers are often unable to compete in. What is required is a shift towards greater product differentiation, and value-added and knowledge intensive manufacturing.

The changing trading environment has lead to new international trade agreements, particularly with the European Union and the United States. These are giving rise both to new opportunities and challenges for the textile industry. While Free Trade Agreements (FTAs) provide momentum to an expansion of trade (and exports), there are a number of related challenges that have to be met. Not only are these FTAs subject to a number of stringent conditions, but there is also growing evidence that tariff based trade barriers are giving way to non-tariff technical trade barriers (TTBs). In particular, the emergence of environmental labelling (eco-labelling) over the past decade is likely to have an increasingly significant impact on international trade. Eco-labels are a guide for consumers to choose products and services that are deemed to be less harmful to the environment than other products within the same category.

South Africa does not, unlike its European and North American counterparts, have a national eco-labelling program. The thesis discusses some of the implications for the development of a South African eco-label, as well as the current institutional capacity of administering such an eco-labelling scheme. It is found that the greatest short to medium-term benefits are likely for South African producers obtaining a recognised foreign label for an important export market, such as the EU eco-label, which is valid in all the EU member states. The potential benefits of eco-labelling, as well as its drivers and barriers, are discussed in this report.

The underlying argument is that South African textile firms will find it increasingly impossible to compete with the low-cost producers of the East, and should accordingly focus on moving up the value chain, and into new markets. Due regard to environmental (and other) issues, including the use of eco-labels, will prove to be vital tools in obtaining access to foreign markets, and gaining (and maintaining) market share.

4. Overview of the South African Economy

4.1 The South African Economy in Numbers

The South African economy has both developed and developing nation characteristics. It is the strongest economy not only in the Southern African region, but on the whole continent, and thus plays an important role regionally and internationally. The economy is based on a democratic political dispensation, and is increasingly opening its doors to the principles of international trade and free movement of capital.

South Africa's political past, combined with its mineral wealth, have strongly shaped the course the economy has taken over the past few decades. The high value of minerals, especially gold, has allowed South Africa strong inflows of foreign exchange and relative prosperity. Political instability, especially in the 1960's and 1970's, had the effect of alienating the country from the rest of the world. As a consequence, South Africa increasingly adopted policies of import-substitution, ensuring the country large-scale independence from international trade. International economic and political sanctions were limiting the country's access to technology and resources from abroad, which further seemed to justify the government's policy of becoming self reliant in most aspects of the economy.

This attitude led to South Africa building up a very diverse manufacturing base. However, limited access to foreign technology and input materials, coupled with widespread instability in the domestic labour market and lack of business confidence, resulted in an economy that was very inefficient and unproductive. It was largely reliant on its mineral wealth and agricultural output, while the manufacturing sector struggled not only in terms of efficiency, but also lacked the output markets and consumer demand necessary to achieve economics of scale.

In the 1980's and 1990's, political pressure and economic reality led to a very gradual lifting on financial restrictions inhibiting the economy. A parallel currency (the financial Rand) was introduced to attract foreign investment, which had sunk to all-time low levels. The 1990's saw further liberalisation in the political arena, resulting in the country's first all-encompassing democratic elections in 1994. This heralded a new economic dispensation too. South Africa was now a 'member' of the international community, and economic barriers were rapidly dismantled. South Africa consequently shed many of the protective measures shielding the economy from international competition at the same time as it was able to take advantage of the widespread opportunities presented by joining the 'world community'. The policies of import substitution perpetuated over many years (albeit both cause and consequence of the historical political situation and international pressure) now exposed the South African economy as largely inefficient and uncompetitive. In particular, labour costs were high in relation to output.

Added to this is the fact that South Africa could no longer rely on its mineral wealth for prosperity, due to the declining value of gold and other raw materials. At present, commerce, financial services (e.g. banking) and manufacturing are collectively responsible for over half of South Africa's output by value, and together employ approximately 36% of the country's workforce (the government / civil service sector accounts for another 31%). The rate of GDP growth has in recent years decreased from a high of 4.2% in 1996 to 1.9% in 1999. Estimates for 2000 are that the GDP growth achieved was approximately 3.2% (Standard Bank, 2001). The same source forecasts positive GDP growth over the next 5 years.

	1996	**1997**	**1998**	**1999**	**2000**	**2001***	**2002***	**2003***	**2004***	**2005***
GDP (% p.a.)	4.2	2.5	0.7	1.9	3.1	3.5	3.3	3.0	2.5	3.0
PPI (% p.a.)	7.0	7.1	3.5	5.8	9.1	6.6	5.6	4.5	4.0	4.4
Prime Interest Rate (Average)	19.34	20.09	21.51	18.22	14.56	14.5	13.5	13.1	13.0	12.6
* = Forecast										

Table 4.1 South African Economic Indicators (Standard Bank, 2001)

Fig. 4.1 shows a breakdown of economic activity in South African, listing the contribution of each sector to GDP (value added) and employment. However, these values are highly dependent on developments in the international economy.

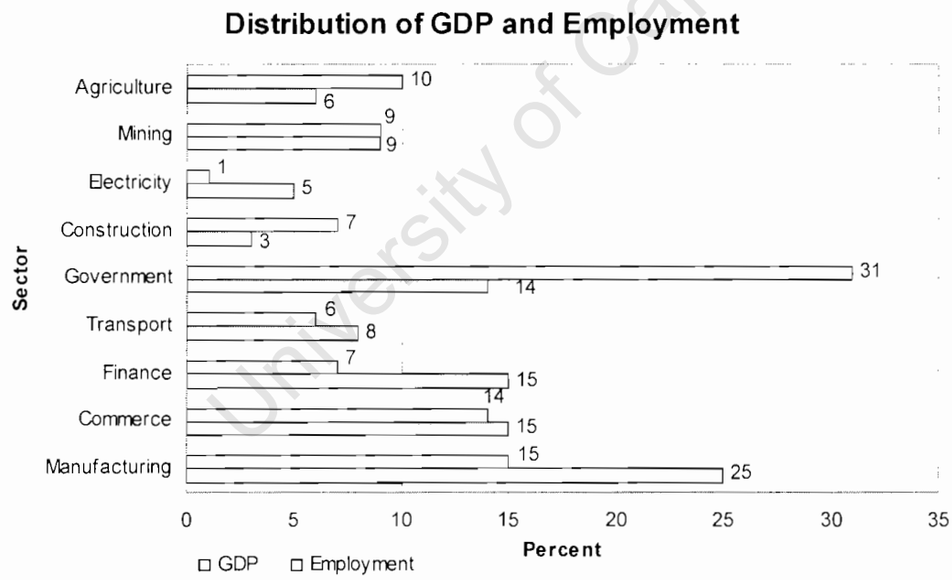

Fig. 4.1 The Distribution of GDP and Employment in the South African Economy (Statistics South Africa, 2000; NPI, 1998)

4.1 The Role of SMEs

Small and Medium Enterprises (SMEs), whose promotion, development and support has long been neglected by the legislative framework, have become a new focus area. The development of SMEs is seen as a vital ingredient to the continued growth of the South African economy, and the government is attempting to redress these past imbalances. It is widely acknowledged that growth in employment is likely to principally originate from small business and the informal sector. SMMEs (i.e. enterprises employing less than 200employees) account for approximately 60 % of all employment in the South African economy, and 40 % of its Gross Domestic Product (GDP) (DTI (1998b). Small business development is accordingly one of the most important platforms for long-term economic growth and prosperity. SMEs also form 41% of all South African registered enterprises and provide 34.6% of all employment: this figure increases to 59% (number of enterprises) and 42% (employment) if one includes mico-enterprises (i.e. those employing less than 5 employees) in the small business / SME definition (=SMME: small, medium *and* micro enterprises) (DTI, 1998b).

In addition, the broad accessibility of SMEs make them an important basis from which to generate a more equal distribution of income, as they offer opportunities whereby by the economically disadvantaged segments of the population are afforded a chances for economic advancement. As only a small portion of the population is in formal large-company employment, South Africa's unemployment problems can only be alleviated with small-business development, training and incentives.

As will be shown later, the textile industry consists of a large number of SMEs (see SME definitions below). While SMEs on average have far lower output than large enterprises, they collectively form a very significant part of the South African textile industry. For statistical purposes, the textile industry is essentially divided into the *spinning, weaving and finishing* sector, where most enterprises are small or medium-sized (employing between 10 and 200 employees), and *other textiles*. Enterprises falling into the *other textiles* group (i.e. automotive textiles, blankets, carpets, cordage, stuffed articles etc.) are mostly *small-sized* enterprises in terms of employment numbers (i.e. <50 employees). What these statistics clearly show is that the development and support of SMEs is an integral part to the development of the South African textile industry.

4.1.1 Definition of SMEs / SMMEs

There are various means of defining typical Small and Medium Enterprises, both qualitatively and quantitatively. In South Africa, there is no single uniform definition, not least of all because different sectors of the economy have vastly different operating characteristics. For example, the mining sector has a completely different capital structure to that of financing and insurance, and quantitative criteria have thus

been adjusted to classify where a firm fits into the SME sector, if at all. This adjustment ensures that the relative size and capital / labour structure of the various sectors is accounted for, as opposed to a purely quantitative classification.

Generally, small enterprises in the manufacturing sector are defined as those that have between 10 and 50 employees, while medium enterprises are those having 51 – 200 employees in total. A full overview of the qualitative and quantitative criteria of SMEs / SMMEs is found in Appendix 01.

4.1.2 Contribution by SMEs / SMMEs

Within the textile industry, small and medium enterprises play an important role, and make up a large portion of textile industry enterprises. Micro-sized enterprises (i.e. less than 10 employees) are often included in industry statistics and thus extend the SME categorisation (to SMME). In the textile industry, most registered enterprises fall into the SMME category (74%), although the actual figure may well be higher (due to the presence of unregistered enterprises). According to figures derived from information in the National Census of Manufacturing (2000a), SMMEs contribute 37% to total employment, and 25% to the total value of sales in the textile industry. Commonly used definitions of SMMEs can be found in Appendix 01. For all intents and purposes, the classification of SMEs and SMMEs are interchangeable with regard to the textile industry, since micro-sized enterprises do not play a crucial role in this sector. Capital constraints and the benefits of economies of scale probably account for this, and make textile production mostly unfeasible for very small players. In other words, while the definition of SMMEs includes micro-sized enterprises, in the textile industry it really is only the small and medium-sized enterprises within this category that are of any consequence.

Significance of SMMEs in the South African Textile Industry (1999)			
Total Textile Sector		**Contribution Towards Total by SMMEs**	
Total No of firms	700	% of Total Number of Textile Firms	74 %
Employment offered	65,900	% of Total Employment	37 %
Value of sales (R Million)	9,800	% of Total Value of Sales	25 %

Table 4.2 Significance of SMMEs in the South African Textile Industry (Statistics South Africa, 2000; own calculations)

4.2 The Manufacturing Sector in Numbers

The manufacturing sector plays an important role in contributing to South Africa's GDP. According to official statistics, the manufacturing sector consists of almost 26.000 enterprises with an output of R 398 Billion (Statistics South Africa, 2000b). The manufacturing sector's relatively constant contribution to GDP- significant at about 25 % - needs to be seen as an important driving force in the overall economic growth of South Africa.

The manufacturing sector provides a ready market for many raw material producing industries. Likewise, a strong primary sector and the availability of raw materials is important for the manufacturing sector. Fig. 4.2 shows how manufacturing sector sales have increased significantly over the period under review (Statistics South Africa, 2001b). The sector forms one of the core focus areas in the DTI's integrated industrial strategy for South Africa (DTI, 2001a). The industrial strategy promoted by the government has a significant influence on economic activity in general and decisions on an enterprise-level. The government's current strategy places great emphasis on knowledge intensive activities and innovation (Kaplan, 2001), and is discussed further in Section 8.1.

Fig. 4.2 Manufacturing Sector Sales (Statistics South Africa, 2001b)

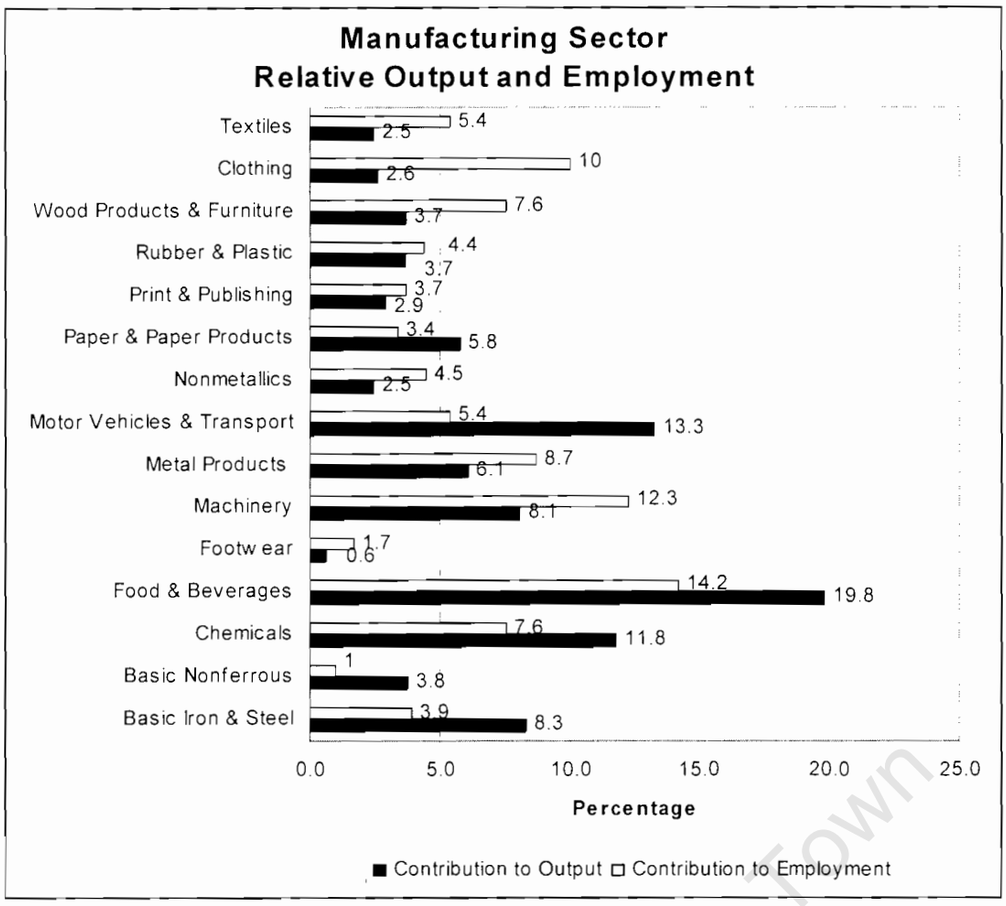

Fig. 4.3 The Manufacturing Sub-Sectors' Relative Contribution to Total Manufacturing Output (NPI, 1998; Statistics South Africa, 2001b)

Fig. 4.3 shows that, while not being amongst the largest manufacturing sub-sectors, the textile industry (and clothing industry) are important contributors to the South African economy. Collectively, the two sub-sectors contribute over 5 % of total manufacturing sector output, while in terms of employment they account for in excess of 15 %. These figures are significant, and show the importance of these sectors (especially in the light of South Africa's poor employment-creation track record).

The 3 largest sub-sectors in terms of their contribution to total manufacturing output are the food and beverages sector (19.8 %), followed by the motor vehicle manufacturing and transport industry (13.3%) and the chemicals industry (11.8%). From an employment perspective, the most important employers are the food and beverages industry (14.2 %), followed by the machine manufacturing (12.3 %) and the clothing industry (10 %).

Where the relative contribution to (value of) output exceeds the relative contribution to employment, within the manufacturing sector, an Output / Labour (O/L) ratio exceeding <1> will emerge.

An O/L ratio of between <0> and <1> means that a sector's relative contribution to manufacturing sector employment exceeds its relative contribution to output. As a result, a ratio between <0> and <1> indicates a relative intensive use of labour, but could also point towards labour un-productivity within that sector. Notably, both the textile and clothing sectors have ratios between <0> and <1>.

Sector	O/L Ratio	Sector	O/L Ratio
Basic Iron & Steel	2.13	Non-Metallics	0.56
Basic Nonferrous	3.80	Paper & Paper Products	1.71
Chemicals	1.55	Print & Publishing	0.78
Food & Beverages	1.39	Rubber & Plastic	0.84
Footwear	0.35	Wood Products & Furniture	0.49
Machinery	0.66	**Clothing**	**0.26**
Metal Products	0.70	**Textiles**	**0.46**
Motor Vehicles & Transport	2.46		

Table 4.3 Output / Labour Ratios in the Manufacturing Sector (Statistics South Africa, 2001c; DTI 2000; own calculations)

Table 4.3 reveals that both the textiles and clothing sectors are labour intensive. This observation is also borne out by recent World Bank data, which found that the textile and clothing sectors together were one of the most labour intensive sectors within the South African economy (Lewis, 2001). Specifically, the textile and clothing sector (combined) had a labour / output co-efficient (i.e. number of workers per Million Rand output) of 12.07, which significantly exceeded the derived co-efficients of all the other sectors listed above. Only agricultural activities, tourism and social services had a greater labour intensity.

A look at the recent past reveals that in 1980 the manufacturing sector's contribution to GDP was almost 29%, while towards the end of the 1990's it had dropped down to just under 25 %. From 1990 onwards, overall GDP appears to have grown at a greater rate than that experienced by the manufacturing sector. This is not necessarily a positive or negative development, as it calls for a closer investigation of the circumstances leading to this. These figures may point to the fact that other sectors, such as the financial sector and tourism, could have grown so strongly that they have significantly increased overall GDP.

Alternatively, it could also mean that South Africa has lost some of its competitiveness, and has a declining manufacturing sector. 'Competitiveness' has been described by a government-initiated panel on the textile and clothing industry in two ways (DTI, 1994):

- "***As competitive standing***, which refers to foreign trade performance".
- "As the ***long-term ability to compete***, which refers to a country's long-run potential for growth and the creation of an economic structure and export composition that adjusts flexibly to rapidly changing patterns of world demand. Concisely stated, a country's or industry's competitiveness is understood as its ability to create and sustain economic value added in the long term relative to its competitors."

As the manufacturing sector is one of the most important value-adding contributors to GDP, any loss in competitiveness is naturally a cause for concern. The greater the value that is added through the production processes and overall transformation of a product, the greater the contribution of a sector to GDP and economic growth.

The manufacturing sector, in the light of advances in technology, infrastructure and process efficiency, could have been leading (and driving) economic growth. The fact that it has not grown at a greater rate than overall GDP points to the following fundamentals: (it should be noted, however, that many of the important macroeconomic fundamentals, such as inflation, monetary policy, political stability and interest rates have become significantly more favourable and stable during 1999 and early 2000.)

Fundamental issues that have an impact on the South African manufacturing sector growth include the following:

- *the general business cycle,*
- *cost and availability of input materials,*
- *labour relations, labour legislation and real wage costs,*
- *training, or lack thereof,*
- *the political situation as this sends strong signals to manufacturers,*
- *levels of technology, and new investment therein,*
- *access to international capital markets as well as exchange controls,*
- *the (real) value of the local currency (real effective exchange rate),*
- *trade legislation, international trade agreements and other market access issues.*

4.3 The Distribution of Manufacturing Sector Enterprises and Contribution to Sales

The distribution of manufacturing enterprises, and output, is largely concentrated in 4 provinces. These are Gauteng, Kwazulu / Natal, the Western Cape and the Eastern Cape. Most manufacturing sector enterprises are located in *Gauteng* (39.6% and contributing 42.9% of total manufacturing output), followed by *Kwazulu-Natal* (21.9% and 19.4% of output), the *Western Cape* (14.7% and 18.4% of output) and the *Eastern Cape* (9% and 6% of output) (Statistics South Africa, 2000a).

Appendix 03 shows these output and locational characteristics of South African manufacturing enterprises (i.e. *number of enterprises* and *output*). As will be shown later, the regional distribution of the textile industry correlates closely with the locational distribution of industry in general.

This chapter outlined some of the pertinent characteristics of the South African economy, the contribution of the manufacturing sector, the important role that SMEs play, and some of the spatial attributes of the South African industry's location. It thereby sets the basis for an overview of the South African textile industry's operating framework, and reviews its stakeholders, the experience of developed and developing country counterparts, the industry's history in South Africa as well as some of the technical stages involved in the manufacture of textiles.

5. Background Review and Operating Framework of the Textile Industry

5.1 History of the Textile Industry in South Africa

The history of the textile industry in South Africa spans approximately half a century. Prior to the 1940's the local industry provided some 3500 jobs and manufactured mostly blankets, rugs and sheeting (Textile Federation, 1998c).

It was only after the World War II that the industry grew significantly. Growth was especially strong in the 1950's. By the end of that decade, 46 mills were producing cotton-based yarns and woven fabrics, supplying 90 % of cotton and cotton-blend yarns, as well as 42 % of cotton fabrics demanded by the South African market. While the industry grew significantly in the ensuing 3 decades, it also faced numerous new problems. Market demand for textiles in South Africa is very unique, encompassing developed, developing and undeveloped country characteristics. For example, while the local market generally demands a very diversified range of textiles, the quantities produced are small by international standards (Textile Federation, 1998c). This imposes an inherent difficulty on manufacturers in the textiles industry: to satisfy developed-country requirements of variety and quality, yet faced by demand characteristics that seldom allow large-scale production and economies of scale. This invariably tends to raise production costs above those of international competitors.

It was recognised in the 1950's that in order to protect South Africa's textile industry with all its unique characteristics (not least of which was its status of being an important provider of jobs), the government had to introduce protectionist measures. These included tariff and volume-based restrictions, effectively making access to the local market by foreign producers exceedingly difficult. The textile industry thus developed as an import replacement industry with high employment ratios (DTI, 1998a). This is, however, a situation similar to that of a number of other countries, most notably the U.S., Italy, the U.K., Canada, Mexico and Brazil, which also afforded its textile industry a high degree of protection (DTI, 1994).

Today the South African textile industry is, in terms of value of output, enterprise size and technology used relatively polarised. On the one hand, a number of very large textile manufacturers exist (predominately in Kwazulu-Natal), who account for a large proportion of the overall output as well as employment. On the other hand, the majority of textile industry firms are typical SMME-sized enterprises (74%), as is shown in Section 6.5. Especially developing countries are likely to feature a large proportion of SMEs, and output, productivity and employment growth of the textile industry will then only be possible in an environment supportive of the growth of SMEs.

The South African textile industry produces products from natural (cotton, wool, mohair, bast) and synthetic (polyester, nylon, acrylic, polypropylene) fibres, yarns (homogenous and heterogeneous blends), fabrics, household textiles (curtains, upholstery, bed-linen) technical textiles (geo-textiles, webbing etc) and medical textiles (abdominal swabs, bandages, surgical gowns etc. Many of these products are in turn used in the manufacture of clothing. Textiles manufacturing comprises a group of interrelated industries that use a variety of natural and synthetic fibres to produce fabrics.

Statistics naturally provide only an *average* presentation of the industry. South Africa has on the one end of the textile industry some very specialised and efficient textile enterprises, amongst whom are some that have even successfully penetrated Far Eastern markets (Maree, 1999). UCT Industrial Strategy Project studies have noted a significant gap between productive firms and others where efficiencies are very low (Kaplan (2001). This appears to characterise the textile industry. However, these relatively unproductive and backward-oriented enterprises are the ones which are now under intense pressure following the opening of the South African economy to world trade and increased competition.

5.2 Overview of the Processes used in Textile Manufacturing

A number of approaches are utilised when categorising the textile industry into its various components, with one of the accepted methods being the categorisation of manufacturing plants according to the *type* of fibre being used (US EPA 1978). Mostly, however, especially when defining manufacturing enterprises, such categorisation is done mainly according to the *output* (i.e. the finished product), and to some degree by process. *Statistics South Africa* categorise by using parts of both criteria (i.e. the *spinning, weaving and finishing* sector), and then various sub-sectors according to output (e.g. *automotive textiles, carpets, rugs etc.*).

There are various processes used by the textile industry to process the raw materials and transform them into finished textiles. The main raw materials used in the manufacture of textiles are cotton, wool and synthetic materials. Some of the steps required are unique to certain input materials used, while other processes are used irrespective of the fibre type. The following are the main processes used:

Spinning is a mechanical process whereby fibres are transformed into yarn and a twist is introduced. This makes them ready for the further process steps of knitting and weaving.

Sizing involves the coating of yarn to lend it protection against excessive abrasive action in the weaving process, as well as removing some of the yarn hairiness.

Blending is a mechanical process whereby fibres from different bales of wool or cotton are mixed to get the right mixture quality.

Weaving is a dry process (which utilises high humidity conditions to reduce the possibility of breakage and tearing of the yarns).

Knitting is a dry process (which makes use of oils to reduce the wear-and –tear during the process. These subsequently need to be removed).

Desizing involves the removal of the sizing agent that was applied, and is usually carried out after the weaving stage.

Scouring is a process whereby the inherent impurities found in the raw materials are removed. The different fibres are scoured in different ways; cotton being scoured with hot sodium hydroxide solutions and detergents, wool using sodium carbonate and detergents, and synthetic fibres are scoured in a mild to strong alkaline solution.

Singeing involves removing the surface hairiness from a woven fabric, thereby enhancing its feel and appearance.

Bleaching is a process whereby oxidising agents (such as hydrogen peroxide) are used to reduce or remove the natural colour of the fabric.

Mercerising is a process whereby concentrated sodium hydroxide solution is applied to cotton fibre to increase its tear strength, sheen and dye-ability, after which the fibre is rinsed extensively.

Printing involves the application of dyestuffs to the fabric surface, after which it is dried, fixed and the residual washed off.

Finishing is the last step in the textiles production process, and involves various processes to enhance the visual appearance of the material, handling characteristics, stain resistance, softening and other special properties.

A typical way of describing the textile industry is that suggested by the US Environmental Protection Agency, using as a basis the generic processes used, and having a bias towards categorisation along certain environmental (effluent) guidelines:

Generic Overview of Processes used in the Textile Industry		
Wool Scouring	Woven Fabric Finishing	Stock and Yarn Dyeing and Finishing
Wool Finishing	Knit Fabric Finishing	
Dry Processing	Carpet Manufacture	

Table 5.1 Generic Overview of Processes used in the Textile Industry (US EPA 1978)

- **Wool Scouring**

This category includes mills such involved in wool scouring and top making, as well as general raw wool cleaning. It is important to note that wet cleaning processes (into which wool scouring falls) have to precede dry processes where the 'raw' fibre can be transformed into yarn or fabric.

- **Wool Finishing**

This category includes finishing processes, as well as dyeing, bleaching and rinsing, and is one of the textile production stages that are characterised by large quantities of chemicals (including hazardous chemicals such as chromium and phenols) and resultant high effluent loads. Before continuing to dry processing, the fabric is usually dyed.

- **Dry Processing**

The textile mills falling into this category are involved in yarn manufacturing, yarn texturing, fabric coating and carpet tufting, amongst others. Weaving, for example, is a dry operation, and generally requires a high degree of humidity. For this reason, a large portion of weaving operations in South Africa are performed in factories located in Kwazulu-Natal, as the region generally has the highest humidity and is thus conducive to operations of this type.

- **Woven Fabric Finishing**

This category consists of two sub-groups, one dealing with the cleaning and / or modification of the cloth, while the other involves the dying, printing, special-finishing and other processes.

- **Knit Fabric Finishing**

A number of different specialised product categories fall into this group, including outerwear, underwear, hosiery and knit fabric goods. Processes used in the manufacture of the above categories include bleaching, dyeing, water proofing and printing, which are similar to the processes used in woven fabric finishing. The main difference, however, lies in the fact that a far lower effluent load emanates from these processes as the sizing and mercerising processes are not required here (see previous description of these terms).

- **Carpet Manufacture**

Carpet manufacture predominately involves the use of synthetic fibres as input materials, although cotton and wool is also used. The process categories found in this group include bleaching, scouring, dyeing, water and flame-proofing, amongst others.

- **Stock and Yarn Dyeing and Finishing**

The main difference between yarn dying and finishing and woven fabric finishing lies in the fact that no sizing (and de-sizing) processes are required with yarn dying. Processes used in this category include cleaning, scouring, mercerising, bleaching and dyeing.

A further classification, which groups the textile industry according to process *and* product (output) criteria, is also commonly used to describe the textile industry. Fig 5.1 is adapted from an IDC report (1999) that analysed the *spinning, weaving and finishing* sector of the textile industry.

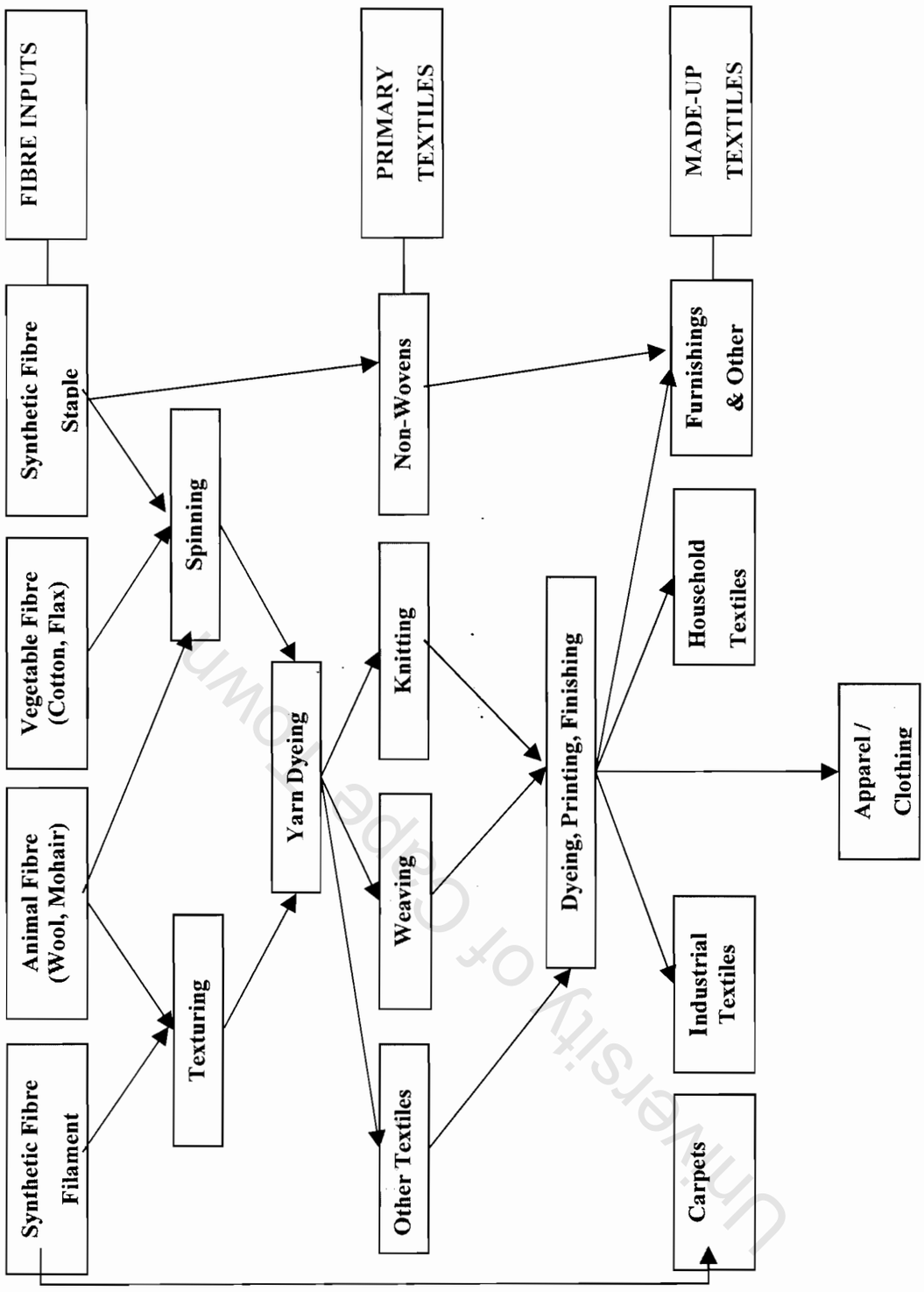

Fig. 5.1 Overview of the Textile Industry (IDC, 1999)

5.3 The Textile Industry in the SADC Region

Due to the relative abundance of raw materials and ease of developing at least a basic textile manufacturing capacity, the textile industry exists in most, if not all member countries within the Southern African Development Community (SADC). The SADC countries consist of the following: Angola, Botswana, DR Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. Together, the SADC has an annual economic output of approximately "US $ 170 Billion and a potential market of 180 Million consumers" (Sikhakhane, 2000).

According to research conducted by Valentine (1998), a large part of the SADC countries' trade of goods consists of intra-regional trade. It is very likely that the SADC Free Trade Agreement (see Analysis in Section 8.2), implemented on 1 September 2000, will increase the volume of trade within the region, especially as tariffs and other more institutionalised trade barriers for most industries will fall away, or be substantially reduced. It is further likely that the enactment of the Africa Growth and Opportunity Act (AGOA, see Section 8.3) on 1 October 2000, with its stringent *Rules of Origin* requiring SSA-sourced input materials, will lead to greater regional trade and thus provide important stimuli for the expansion of the regional textile industry. This should in turn lead to greater capital flows for investment. However, at least one source cites reports by the African Development Bank which highlight the problem of high regional transport costs (Sikhakhane, 2000). High transport costs are a greater barrier for exporters to the US from African markets than the US' remaining import tariffs, especially for non-qualifying items under the AGOA.

A table showing the main non-service industries in the SADC in terms of output, employment and export volume is provided in Appendix 02. This reveals that the textile industry ranks **11th** in terms of the greatest output-producing ***goods*** sub-sectors, while the clothing industry ranks **13th** . In terms of ***employment***, the textile industry and clothing the industry are the joint **7th** greatest employers in the region, with the top employment sector being agriculture. From an export perspective (exports as a % of non-service exports), the textile industry ranks **6th**.

In terms of (intra-regional and international) clothing exports within the SADC region, the comparative advantage in production lay with Mauritius, South Africa, Zambia and Zimbabwe. Collective data for the region as a whole reveals that the sector "*textile fibres*" was one of the few that enjoyed a comparative advantage in terms of trade performance during the year of measurement (1995) (IDC, 1998). These observations need to be seen in the context that they mostly relate to the period 1991 – 1993, due to the inherent difficulty in obtaining and generating comprehensive up-to-date data for the region as a whole. With changes in training and productivity, inflation, politics, monetary policy and its impact on capital costs and exchange rates, the situation is constantly evolving and may now be quite different to that period.

On the whole, the textile industry plays an important role in the region, especially in terms of employment creation, but also in terms of its link with the regional clothing industry (which employs 265000 people) (CSIR, 2001). The African Growth and Opportunity Act (AGOA), which is analysed in Section 8.3, is likely to have a significant positive influence on the region's textile and clothing industries. Subject to certain conditions being met, exports from the clothing industry will be allowed duty-free access to the U.S. over the next 8 years, which will in turn generate significant demand for the region's (up-stream) textile industry.

This direct link between the textile and clothing industries referred to above (the clothing industry being the major purchaser of SADC produced textiles), makes it useful here to provide a very brief overview of the scale of clothing production in the SADC, it having been impossible to obtain similar data for textiles (CSIR, 2001).

Clothing Production		
Country	**Million Units**	**Rank**
Angola	Negligible	N/a
Botswana	16.0	6
DR Congo	Negligible	N/a
Lesotho	54.0	4
Malawi	27.5	5
Mauritius	149.5	2
Mozambique	6.5	9
Namibia	1.5	10
Seychelles	Negligible	N/a
South Africa	463.5	1
Swaziland	14.5	7
Tanzania	10.0	8
Zambia	0.5	11
Zimbabwe	61.5	3
TOTAL	**805.0**	Note: Data excludes knitwear (pullovers) and hosiery (socks etc.)

Table 5.2 Clothing Production in the SADC (CSIR, 2001)

5.4 Developed Country Experience

The textile industry in most developed countries is facing major structural change and related challenges, as it moves from one that was heavily protected and subsidised to one that needs to become internationally competitive. The problems in the textile industry of developed countries are sometimes blamed on the declining competitiveness in relation to textile exports from developing countries.

According to a report commissioned by the World Bank (1991), the main adjustment strategies implemented by such (developed) countries are

- Government support through protectionist measures (US, EU) and subsidies (UK , Italy and France)
- Efforts to reduce production costs through modernisation of equipment (UK, Germany, Japan), through mergers, divestiture and direct foreign investment overseas (US, Germany, UK), and by use of immigrant labour and outward-processing trade (Germany, France, US)
- Product innovation and process flexibility (Italy, Japan)

The above-mentioned report was used as the basis in obtaining details relating to the textile industry in various developing countries (World Bank, 1991):

The United States

The US textile industry has evolved in a climate marked by significant protection. Between 1960 and 1980 only 8% of domestic textile consumption was imported, but higher import levels since then led to calls for greater protection of the industry. Notwithstanding the protection, the industry has over the years invested in a modern stock of equipment and has followed a mass-production strategy with success. It has also not neglected product innovation and marketing. However, the strong performance of the US $ is increasingly eroding the industry's international competitiveness, and is leading to a greater degree of US (export) market penetration by foreign firms. Bilateral and multilateral trade agreements (e.g. NAFTA, WTO rules etc.) are increasingly opening up US markets. Also, the recent enactment of the US Africa Growth Act (see Section 8.3) will lead to African imports increasingly penetrating US markets. However, on a relative level, while the Act allows for significantly greater access by African exporters (from less that 1% to 3.5% of US textile imports over 8 years), such numbers are still small relative to the size of the US market.

Germany

The German textile industry has not received an excessive amount of assistance from its national government, although it has often been helped by local governments (depending on the sector's relative importance in a particular state) or financial institutions (who often hold equity stakes in textile industry companies). The country's industry has attempted various strategies, including high-value niche market specialisation, as well as high-volume production by achieving economies of scale through vertical and horizontal integration. It would appear that, notwithstanding the industry's integration and streamlining of operations, its high-value added specialisation has been more successful than competing with mass-producers from other countries.

Japan

Japan's share of world textile exports decreased significantly between 1970 and 1980 as competing nations such as Korea, Taiwan and Hong Kong captured most of its export market share. The country's loss in competitiveness was largely blamed on rising labour costs.

The Japanese industry's adjustment process can be summarised as follows:

- A greater emphasis has been placed on knowledge-intensive production, which has given Japan a competitive advantage in this field
- The labour-intensive segment in the textile industry has almost completely vanished (downscaled or relocated to other countries)
- The mass-producing (especially synthetic) yarn and fibre enterprises have also generally moved offshore, where Japanese 'textile' capital is presently being used more productively
- Small and Medium Enterprises have started specialising in high quality and high value-added production with great success

Overall, the outlook for the Japanese textile industry is far more satisfactory than that of similar developed countries, although the general economic slowdown experienced in the late 1990s has significantly curtailed the industry growth.

Norway

Norway, as well as other Nordic countries, originally attempted to foster a broad-based textile industry, and was active in lending financial and other support to its textile industry. However, the country has realised that some of these efforts were unsustainable, and has subsequently abolished its aid schemes for the textile industry (consisting of subsidies, low interest schemes and restructuring grants). Since then, tariffs on many textile and clothing items have either been reduced or abolished. Items originating from EC states or least-developed countries enjoy duty-free access to Norwegian markets, while imports from all other countries face high import tariffs and quantitative restrictions.

Italy

Notwithstanding relatively high levels of government intervention and protection, the Italian textile industry has been able to achieve significant growth and success in areas where it has a comparative advantage (especially in design quality and marketing). Italy's textile industry has subsequently become the largest net exporter of textiles in the world, notwithstanding the fact that labour costs in Italy are high. These (high) costs have to a large extent been negated by high levels of productivity, high levels of branding and marketing, as well as a focus mainly on the upper end of the market (i.e. niche markets, quality designs, export etc.).

In Italy, one of the most important reasons for the successes had by the textile industry is the combination of government-led support structures and private-sector decentralisation and co-operation. Industry support included nationalisation of large, ailing textile firms, concessional loans to textile enterprises through the *Textile Modernisation Fund*, and government rebates offered on some labour costs. The private-sector initiatives have lead to the thriving of SMEs, flexible specialisation and a focus on high-quality products. It is said that up to 90% of Italian textile enterprises employ fewer than ten individuals, while 70% employ less than three. Most of these enterprises are clustered in the *Prato* region of Italy, where a strongly decentralised system of co-operation between the various companies along the production and supply pipeline has lead to (collectively) significant addition of value to the final industry output (Maree, 1999).

5.5 Developing Country Experience

Due to the relative ease with which the textile industry can be established, the textile industry has become an important manufacturing cornerstone in many developing countries. It uses significant amounts of labour, a resource that developing countries generally have abundantly. However, it is only in those countries where this supply of labour is matched by significant efforts in training the workforce (i.e. adding knowledge through investment in human capital) that the textile industry has had a chance of becoming a competitive industry. Within the greater manufacturing sector, the industry is an important consumer of materials and services, and many upstream and downstream industries depend on the textile industry directly or indirectly.

The textile industry thus often serves as a cause and catalyst for other industrial development, and provides a market for goods and materials in upstream industries and the primary sector. In Africa, the textile industry has been a particularly significant engine for growth in Morocco and Tunisia (Mbendi, 1999).While it still requires substantial investment in machinery & equipment, often imported at great cost, a number of the processes can be completed with a factor-of-production bias in favour of labour inputs. It should be noted, though, that low-cost labour per se is an insufficient variable to guarantee a comparative advantage in this sector, as low productivity (as is often the case in South Africa) negates many of the benefits of low-priced labour. Poor productivity levels, due to lack of training and an inefficient capital / labour mix, may eradicate some of this advantage. Management inefficiency often compounds this problem. A previous report noted that some of the developing-country comparative advantage (due to low labour and other input costs) has been lost in recent years to developed countries (Gilfillan, 1997). These have made use of efficient, cutting-edge technology to significantly enhance overall productivity.

In addition, developing countries have frequently seen low levels of investment, particularly in infrastructure and logistics, which have consequently retarded the growth of the textile industry (Kaplan, 2001).

5.6 Technology Aspects

The development of technology in the textile industry can roughly be divided into three stages (Maree, 1995). The first of these stages, having commenced in the 18th century and lasting to the pre World War II, was based largely on English spinning and weaving technology used for the manufacture of natural-fibre textiles, based largely on cotton. The 1930's to 1960's were dominated by USA-developed technologies, mainly for the production of labour-intensive synthetic and blended fibre textiles.

Since the 1960's, the emphasis has changed once again, this time to focus on labour-saving, and is dominated by European and Japanese technology (Toyne, 1984). One of the most important factors precipitating this shift is the fact that technological innovation had a widespread impact on making textile technology widely available, as opposed to being the propriety technology of particular textile manufacturers (Maree, 1995).

Looking at South Africa, a polarisation of technology is visible. South Africa's textile industry shares a common background of having been largely shut off from the rest of the world during the previous dispensation, due to international sanctions as well as an inward looking political and economic climate. This adversely affected the replenishment of the industry's capital stock (including machinery), and resulted in the use of outdated and inefficient technology. However, since the political (and with it the economic) climate liberalised, different trends could be noted. Some textile companies chose not to replenish their capital stock (due to a number of voluntary and involuntary reasons, mainly the high cost of capital), and often tried to reverse the trends towards increasing globalisation and waning protectionism. Others, either due to readily available financial resources, a forward looking approach, or both, replenished their capital stock by investing heavily in new technology, and improved their local and international competitiveness. At present, therefore, the South African textile industry consists of sections that utilise outdated or inefficient technologies, while other sections are at the cutting edge of technology and successfully compete internationally.

While statistics, by definition, usually provide and average and perhaps paint an unnecessarily bleak picture, significant sections of the South African textile industry possesses the ability to compete successfully in this technologically advanced field. Examples include *Brits Textiles*, a Cape-based subsidiary of the listed *Seardel Goup*, which specialises in technical textiles and produces motor vehicle seat textile fibres for a range of vehicle models built locally for the whole world (Capstick-Dale, 2000). Another example is *Gelvenor* (part of the *Avtex Group*) in Kwazulu-Natal, whose products include high-tech medical fabrics and geo-textiles, as well as highly specialised parachute material for the local and international markets. Further examples include *Industex* (geo-textiles, industrial fabrics) and *Frame* (diversified range including geo-textiles and industrial textiles).

5.7 Identification of Major Stakeholders

There are a number of Role players that directly or indirectly affect the operations of the textiles industry. The role- players in this section go beyond the traditional 'triangle' of government – private sector – labour organisations, and have been expanded to include industry support, non-governmental and research organisations. Each have a significant influence on the direction the industry is going; however, due to the globalisation of trade and financial markets, various exogenous variables also significantly affect the local industry. The local role players thus have to combine their influence to steer the industry in response to local conditions as well as foreign influences.

5.7.1 Government

The government plays a fundamental role in both regulating, supporting (and taxing) the textile industry. This includes its role in implementing and enforcing the legislative framework for the industry, and (after consultation and consent) drawing up protectionist measures and tariffs where needed. This is no easy role, and needs to be done with the utmost of care. The government is also a signatory to various trade accords, committing it to a dismantling of tariffs. This means it does not have much leverage in this regard. Furthermore, it is the role of Government (local Government in particular) to enforce the industry's compliance with environmental legislation. This is a difficult role, especially in the face of the often cited situation of inadequate manpower.

One of the most important and relevant roles the government plays at present, and something which has caused much debate in the textile industry, is its role in controlling 'dumping' by foreign country's textiles sectors This it does mainly by imposing punitive tariffs where such cases are found to exist, although the imposition of any trade barriers is becoming an increasingly difficult method to rely on, especially in the light of the international trade agreements the government is signatory to.

The government, especially through the Department of Trade and Industry (DTI), also draws up support measures where these are found to be necessary. These support measures, usually in the form of financial assistance at reduced interest rates, include SPII (Support Program for Industrial Innovation), the DCCS (Duty Credit Certificate Scheme) and EMIA (Export Marketing and Investment Assistance Scheme).
The DTI's role is not only the regulation of trade, industrial and related issues, but also the planning and promotion of the South African industrial sectors and business development in general. Especially in the light of rapid opening of our markets, the industry is often ill-prepared to face the increased competition. Financial support measures can fill the important role of assisting firms to become more competitive, helping to avoid excessive trade (and Balance of Payments) deficits. They may, however, not act as a disincentive for the industry to become more efficient.

Besides trade issues, the government is also responsible, at least in part, for education and training issues in the textile industry, mainly through its department of labour. For this purpose *Sector Education and Training Authorities* (SETA) were established during March 2000 (in terms of the Skills Development Levies Act 9 of 1999), replacing the *Textile Industry Training Boards.* The Clothing, Textiles, Footwear and Leather (CTFL) SETA's mission is to "develop and enlarge the skills base of all those employed within the CTFL economic sectors through the promotion and implementation of effective learning programs and skills planning which will advance workplace security and productivity as part of this process" (Textile Federation, 2000b). Some of the SETA's responsibilities have been delegated to chambers closer to the main (relevant) manufacturing centres, based as follows: Clothing (Cape Town), Textiles (Durban), Footwear and Leather (Port Elizabeth). The SETAs are made up of an equal number of employer representatives of the various industry sub-sectors and trade union (SACTWU) representatives.

The government is also the main shareholder of the *Industrial Development Corporation* (IDC), a financing authority that invests essentially in industrial project mainly in the SADC region. The IDC's Textiles Strategic Business Unit (Textiles SBU) provides finance to new and existing enterprises in the clothing and textiles (as well as the leather and footware subsectors) (IDC, 2001). It is the stated goal of the IDC to assist in making these industries internationally competitive. The Textiles SBU thus considers applications from industry-players along the value chain, from fibre production right through to the manufacture of final products such as garments, household and industrial textiles (IDC, 2001). In practice, stringent (minimum) loan requirements as well as the need for collateral put IDC beyond the reach of many of the smaller textile manufacturers in South Africa.

5.7.2 The Private Sector (including Industry Organisations)

In a free market economy, the private sector plays the important role of investing its resources in the factors of production to produce the greatest possible output. The private sector ultimately drives the industry, reacting to the various market signals. For this reason it is imperative for all role players to create the right conditions that are conducive to increased investment and output. By stimulating the private sector through favourable market conditions the greatest hope exists for significant growth and employment creation with in the textiles industry.

A number of private sector associations (such as *the Textile Federation,* the Clothing Federation and *Clotex*) exist that collectively promote the interests of the textile industry, and represent the industry's viewpoints at negotiations with the government, employee organisations and foreign trade bodies. They also play an important role in creating and promoting active dialogue not only between themselves and textile enterprises, but also on an intra-industry level between the various firms.

The Textile Federation (Texfed) is the most important of the textile industry organisations, due to its membership coverage (in excess of 50 companies, including the JSE listed ones) and wide-reaching agenda. Its membership coverage within the textile industry consists of the following segments: fabric knitting (±75%), wool and worsted (± 100%) and cotton / polyester / poly-cotton (± 80%). In the survey conducted in the South African textile industry (see Appendix 11), 76% noted that they were members of Texfed. The principal functions of Texfed consist of (Textile Federation, 2000c):

- *The monitoring of the effect of international trade on the South African textile industry*
- *The gathering, analysis and dissemination of statistics on matters concerning the textile industry*
- *Publicity and public relations*
- *General information services*
- *Assisting in training and education matters*
- *General administrative services*

Texfed acts both as Secretariat for a number of similar associations and directly in matters of overlapping, common interest. Where required, *Texfed* also provides individual service to these associations, which include (Textile Federation, 2000c):

- *South African Cotton Textile Manufacturers' Association* (SACTMA) (represents wide interests including spinning and weaving of cotton and cotton/synthetic blends, fabric coating, proofing activities and the manufacture of narrow fabrics and trims;
- *South African Worsted Manufacturers' Trade Association* (SAWMTA). This association has 2 sub-divisions, i.e. Worsted Spinners/Weavers, and Worsted Spinners, being concerned with industrial and domestic knitting yarns, while the waving section members have integrated spinning operations both for their own use and for industrial yarn sales;
- *National Fabric Knitters' Trade Association* (NFKTA) which represents the interests of the Fabric Knitters (both weft and warp knitting in all fibres and yarns, and the dyeing, printing and finishing of these fabrics);
- *Fibre Group*, being made up of Corporate Texfed members, namely *Hoechst* and *SANS*.

Clotex, on the other hand, is a *joint* textile and clothing industry committee functioning with the specific purpose of seeking ways to encourage co-operation between players in the (textile and clothing) pipeline, improving response times and improving efficiencies.

The *South African Textile Industry Export Council* (SATIEC) is an organisation that promotes South African produced textiles to the international arena. It was founded to "develop the export of South African textiles to world markets" (Viljoen, 2000), and aims to expose and make available South Africa's diverse

range of textile products and related services to international markets. It focuses mainly on the following categories: fibre, yarn, fabric (apparel, home, automotive and technical), made-up home textiles and made-up technical textiles (SATIEC, 2000).

Besides the dedicated *textile industry* associations, a number of associations exist that represent both the upstream and downstream industries of the textile industry. These include *Cotton South Africa* (which acts as a cotton industry representative and advisory body) as well as *Clofed* (which is the industry representative of the clothing industry and acts as an important consultant to the government regarding policy formulation etc). Further up-stream and downstream associations include the *South African Wool and Mohair Processors' Association,* various provincial *Clothing Manufacturers' Associations*, the *National Clothing Federation of South Africa* and the *South African Dyers' and Finishers' Association.*

5.7.3 Labour Organisations

The main trade union representing the interests of workers in the textiles industry is the South African Clothing and Textiles Workers Union (SACTWU), with approximately 120.000 members. SACTWU's aim is to regulate relations between members and their employers and to protect and further the interests of its members (SACTWU, 1999).

Trade unions are sometimes perceived as not being accommodating to the concerns of an industry and unable to understand market forces, especially those that result in restructuring and job losses, or require a more flexible labour market. Strikes and collective labour action in recent years are likely to have contributed to a rise in per-unit labour costs, and subsequent losses in international competitiveness. There are, however, indications that organised labour and employer representatives are starting to find 'common ground', which would be the basis for identifying common internal and external problems, as well as devising strategies for successful employer-employee relations.

In fact, the South African economy's manufacturing sector has often been described as un-competitive due to its low productivity. There appears to be a need for greater debate in South Africa about a more modern form of trade-unionism, where a mutually beneficial relationship between employers and employees is promoted (based on partnership), rather than the old system of confrontation and authoritarianism. There appears to be some signs of a paradigm shift within trade unions, away from the image of unions being "workers in red shirts...",protesting, while their leaders are "...making fiery speeches, often against capitalism" (Haffajee, 2000). SACTWU has joined a number of unions in South Africa that now have investment arms, with its income from such investments exceeding union members' contributions. While most of the union's investments are in so-called 'New-Economy' companies, SACTWU has also acquired three companies from within the clothing and textile sector: Zenzeleni clothing, Mosana hand-weavers and

Beier wool, all of whom having been turned around from loss-making entities that were in liquidation, to profitable ventures (Haffajee, 2000).

5.7.4 Non-Governmental, Support and Research Organisations

Non-Governmental (NGOs) and other support organisations play an important role in the textiles industry. Many donor organisations such as the *Danish Environmental Aid Agency* (DANCED), contribute strongly to the development of cleaner production programs and technology transfer in this industry.

Academic research is conducted by various academic institutions, including universities such as the *University of Cape Town* (UCT) and the *University of Natal (Pollution Research Group* PRG). Such research is often done in collaboration with industry and "semi-governmental" organisations such as the *Water Research Commission* (WRC), although the WRC merely facilitates research through the granting of financial assistance. Training and formal education were provided mainly by the *Textile Industry Training Board* (TITB) and the *Natal Technikon.* The TITB, however, ceased to exist during March 2000 (Bowen, 2000), with the responsibility for training now falling under various *Sector Education and Training Authorities* (SETAs). The mission of SETAs is described under the *Government* subsection. Other educational institutions, such as the *Peninsula Technikon*, have recently introduced textile training courses.

Other "*semi-governmental*" organisations include the *Centre for Science and Industrial Research* (CSIR) with its Textile Technology Division (Textek) (responsible for research). Two internet-based initiatives were launched by the CSIR in conjunction with the DTI, being Texweb (which provides a variety of information, including summaries of key issues facing the Southern African industry) and TIMSSA (focusing on the textile pipeline on a regional / SADC level). Another organisation, the *Environmental Monitoring Group*, has been involved in assessments of general environmental performance of various manufacturing sectors. The *South African Bureau of Standards* (SABS) is responsible for testing and setting some of the industry standards (quality and environmental), while the *National Productivity Institute* (NPI) is responsible for finding and implementing productivity-enhancing improvement options.

This section outlined the extent to which the textile industry has developed in South Africa over the past 50 years, and recounts some of the experiences of this industry in other developing and developed countries. Important stakeholders were identified, including Government, the private sector and industry organisations, labour organisations and NGOs, support and research organisations. All of these play an important role in the dynamics of the textile manufacturing industry. This section thus provides a basis from which to explore and analyse the South African textile industry in terms of its locational attributes, sales, employment and levels of investment.

6. Analysis of the South African Textile Industry

6.1 Locational Characteristics

The largest concentration of textile industry enterprises is situated in the Gauteng region, followed by Kwazulu/Natal, the Western and the Eastern Cape. While the Gauteng region may have the largest number of registered enterprises in absolute terms, the vast majority of the larger enterprises are located in Kwazulu/Natal and the Western Cape. Nodes of concentration in Kwazulu/Natal include Durban, Newcastle, Empangeni, Hammarsdale and Pietermaritzburg, while in the Western Cape these include Cape Town, Paarl, Wellington and Atlantis. In Gauteng, the industry is located mainly in the greater Johannesburg and Pretoria areas, as well as Witbank, Brits and Rustenburg. Most of the large, publicly listed companies are located in Kwazulu/Natal, especially in the Durban Metropolitan Area (Durban, Prospecton, Pinetown etc.) and Hammarsdale. The latter is an example of an industrial development node that is to a large extent dependent on the textile industry. In the Western Cape the number and size of textile companies is also substantial, while its linkages with the Western Cape's clothing industry are of particular importance.

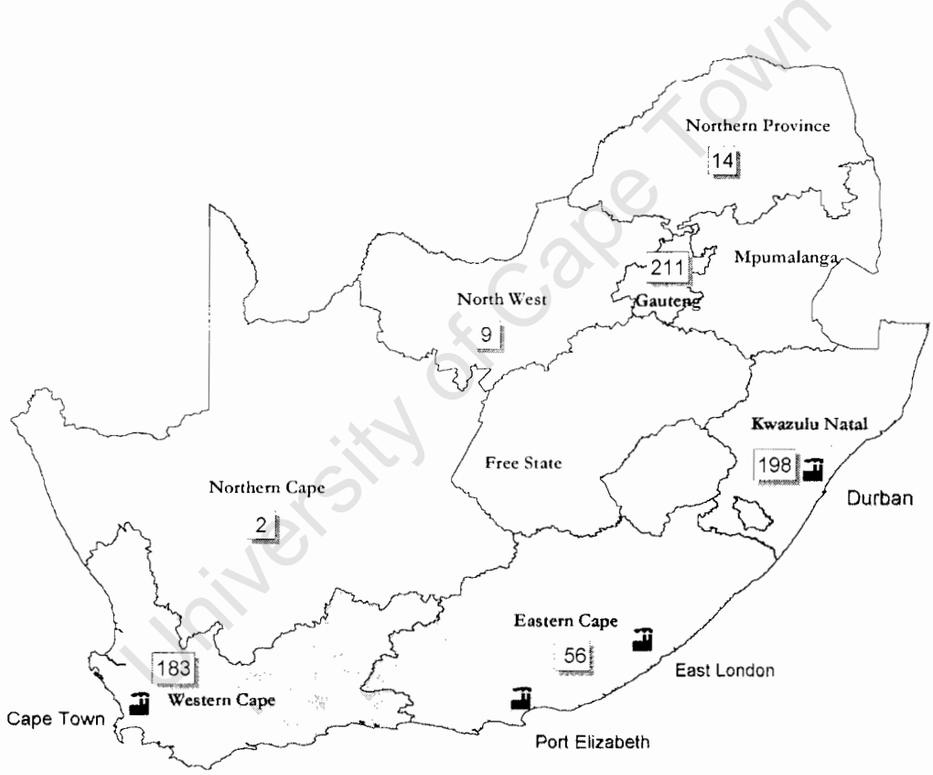

Fig. 6.1 The Distribution of the South African Textile Industry (based on Statistics South Africa, 1996, own projection)

As can be seen in Figure 6.1, 648 textile companies (accounting for 92% of the total) are located in the coastal provinces of the Western and Eastern Cape and Kwazulu/Natal, and well as inland in Gauteng. Important drivers of the location of the textile industry in these areas include access to competitively priced factor inputs (especially labour), access to support and service industries (logistics, telecommunications) and a ready market for the industry's output (i.e. the clothing industry). In Kwazulu/Natal, environmental factors (such as high humidity levels) also play an important role, being conducive to the manufacture of textiles.

In addition, with the exception of Gauteng (which has the greatest overall manufacturing output in the country), the other three provinces referred to above all have close and reliable access to harbour facilities, which is an important factor in the international trade of textiles. The Western Cape has use of the Cape Town port facilities, while the Eastern Cape has major ports in Port Elizabeth and East London (and soon in Coega). Kwazulu/Natal has access to the Durban port facilities, with the bulk of textile industry enterprises in this region (including Hammarsdale) being within 40 - 50km from the Durban harbour.

6.2 Sales Output

The textile industry is a large and significant industry in South Africa, and an important contributor to the South African economy in many ways. These include its contribution to GDP and employment (it is the 14th largest manufacturing sector, and 7th largest manufacturing sector employer), and the direct and indirect importance of the textile industry to the many up-stream and down-stream industries it relies upon, or that rely on it. In terms of volume, the textile industry produced 619,316 t of textiles during 1999, which equates into roughly 15 kg per capita (based on an assumed South African population of 40 million) (Statistics South Africa, 2000c). Domestic consumption of textiles is varied in nature (ranging from low cost and quality to high cost and quality), and is likely to be in excess of the derived 15 kg per capita due to the unfavourable trade balance (South Africa is a net importer of textiles). This compares with an average of 21 kg per capita in developed countries (DANCED, 2000).

The nominal sales output recorded by the textile industry during the 1990's has increased from R 5.7 Billion in 1990 (clothing sector: R 6.0 billion) to R 10.2 billion in 2000 (clothing sector: 10.5 Billion). As these figures are nominal values, and taking into account that the growth rate of nominal output can be derived at a being a little over 5 % p.a., it soon becomes clear that textile industry sales are unlikely to have kept ahead of the inflation rate. In fact, using constant 2000 prices, the real value of textile sales has *decreased* by almost 15% over the last 5 years (1996-2000). The latest available annual figures (for 2000) show that nominal sales have rebounded by 4% year-on-year since 1999.

Fig. 6.2 Value of Sales: South African Textiles and Clothing Industries (Statistics South Africa, 2001b; DTI, 2001c)

Textiles sales as a percentage of total manufacturing sector sales are just over 2 %, and have declined slightly since 1995 (2.9 %) to the latest available figures for 2000 of 2.3 % (Statistics South Africa, 2001b). The textile sector's contribution to South Africa's GDP is approximately 0.7%. It plays an important role in regional and local economies, especially in those areas where most of the industry is located (Western Cape, Kwazulu Natal and Gauteng) (DTI and IDC, 1998). The distribution of textile industry enterprises is shown in Section 6.1.

The Western Cape's textile industry accounts for 25% of the country's textile output, while the Kwazulu / Natal region contributes approximately 29% to the total textile industry output (October, 1996). While the output of the Kwazulu / Natal textile industry has always been significant, the strong presence of the clothing industry in the Western Cape is likely to continue providing and important impetus for the textile sector in this region. It also appears likely that the traditional linkages between the clothing and textile industry will be strengthened to take advantage of benefits offered by international free trade agreements (FTAs) such as the African Growth and Opportunity Act (AGOA, see Section 8.3) (Thomas, 2001). Greater co-operation should ensure a significantly greater chance of providing price effective and high quality outputs to international markets.

6.3 Number of Enterprises and Categorisation of the Textile Industry by Type of Activity

There are approximately 700 textile enterprises in South Africa, which equates to approximately 2.7% of all enterprises (25,900) active in the manufacturing sector (Statistics South Africa, 2000a). While this number refers to the time period of the last comprehensive manufacturing census in 1996, it is used here as a basis as no reliable or comparable recent data are available. These enterprises are categorised as follows:

Major Group: "Spinning, Weaving and Finishing of Textiles" (Total = 151):	Number of Enterprises **('96 census data)[a]**	Percentage of Industry Output **('96 census data)[a]**	Percentage of Industry Output **('00 data)[b]**
Activities in Respect of Animal Fibres, including Washing, Combing and Carding of Wool	6	3%	N/a
Spinning, Weaving and Finishing of Animal Fibres	7	44%	N/a
Spinning, Weaving and Finishing of Vegetable Fibres	102	4%	N/a
Finishing of Purchased Yarns and Fabrics	36	9%	N/a
SUB-TOTAL :	**151**	**60%**	**63 %**
Major Group: "Other Textiles" (Total =550):			
Blankets, Furnishing and Stuffed Articles	134	8%	N/a
Tents, Tarpaulins, Sails and other Canvas Goods	80	2%	N/a
Automotive Textile Goods	20	5%	N/a
Other Textile Articles	168	9%	N/a
Carpets, Rugs and Mats	31	7%	N/a
Cordage, Rope, Twine and Netting	14	1%	N/a
Manufacture of Textiles not elsewhere Classified	103	8%	N/a
SUB-TOTAL :	**550**	**40%**	**37 %**
TOTAL number of enterprises in South African TEXTILE INDUSTRY	**701**	**100%**	**100%**

Notes:

[a]: 1996 data: Statistics SA Census 1996, (released 2000) **[b]: 2000 data: Statistics SA Statistical Release P3041.2, (2001)**

Table 6.1 Total Number of Enterprises in the Textile Industry by Type of Activity (Statistics South Africa, 2000a)

The *spinning, weaving and finishing* (SWF) sector makes up just over 21% of the total number of textile firms in South Africa, while contributing 63% to the total *value* of industry output (up from 60% in 1996). The rest of the textile industry is classified as "*other textiles*" (OT), and accounts for almost 80% of the total *number* of enterprises, while contributing 37% to the total *value* of industry output (down from 40% in 1996) (Statistics South Africa, 2001).

One needs to be aware of the inherent limitations of these statistics, as they do not capture companies that are un-registered (especially in some of the decentralised areas), or the informal sector. The 'unregistered' enterprises are likely to mostly fall into the group "other textiles" (e.g. canvas goods, stuffed articles etc.), although the problem with capturing these statistically may slightly distort the real picture. The informal sector in the textile industry (on the manufacturing side) is likely to be insignificant, and much smaller than that in the clothing industry. Here unregistered 'home industries' consisting of micro-enterprises are likely to make up a significant number.

Within the SWF sector, the largest sub-group is made up of those enterprises using vegetable fibres (i.e. cotton etc.), which accounts for 102 (14.5%) enterprises but only 4% of the total value of textile industry output. A small number (7) of SWF enterprises use animal fibres (1% of total), but together account for almost half of the textile industry value of output (44%). They would, by extension, provide a very important market for the South African wool industry.

In the OT group, *blankets, furnishings and stuffed articles* (134 enterprises, 8% of output), as well as *other textiles* (168 enterprises, 9%), stand out. What is notable is the fact that a large number of enterprises fall into these categories, while not contributing a proportionate amount (per enterprise) to the total value of output. This indicates that they are generally of a smaller size, and points to a flatter industry structure. This observation is consistent with the concentration (of sales) ratios in Section 6.4.

6.4 Concentration of Sales by Type of Activity

Concentration ratios show that the contribution, in terms of sales and work done, of the largest 4 enterprises falling into the "*spinning, weaving and finishing of textiles*" category account for approximately 31 % of output, while the largest 10 enterprises collectively contribute approximately 49 % of output (in this category). In the "*other textiles*" category, the largest 4 enterprises (out of 550) account for 24 % of output, while the 10 largest enterprises contribute 37 % of output by value (Statistics South Africa (2000a).

Taking the weighted average contribution of the *entire* textile industry (i.e. '*spinning, weaving and finishing*' and '*other textiles*'), the largest 4 enterprises collectively contribute 28.5 % of total 'sales and work done', while the largest 10 enterprises account for 44.8 %.

Sales Concentration Index		
Textile Industry and Comparison with Various Other Sectors		
Sector	**Contribution by largest 4 Enterprises (CR4)**	**Contribution by largest 10 Enterprises (CR10)**
Textiles Sub-sector: *'Spinning, Weaving and Finishing'*	**31 %**	**49 %**
Textiles Sub-sector: *'Other Textiles'*	**24 %**	**37 %**
Weighted Average (Textiles) (Sub-Sector Ratio = 63% : 37%)	**28 . 4 %**	**44 . 6 %**
Beverages	61%	81.5%
Paper and Paper Products	50.6%	73.4%
Rubber Products	65%	82%
Motor Vehicles	65.5%	96.7%
Clothing	17.2%	26.8%

Table 6.2 Sales Concentration Index: Sales by Largest Textile Industry Enterprises (Statistics South Africa, 2000a)

It is significant that the largest 10 enterprises in both the '*spinning, weaving and finishing of textiles*' sub-sector, as well as the rest of the textile industry (i.e. those enterprises not falling into the above category, and classified as '*other textiles*', contribute less than 50 % to the total output of the South African textile industry. Relative to many other industry sectors, these concentration ratios are relatively low, and point to a rather flat industry structure that is, on the whole, not dominated by a few very large enterprises.

Market concentration in itself is not necessarily detrimental to the industry, and situations may even arise where the size of enterprises are beneficial to the industry in terms of efficiency and economies of scale. The buying power of large enterprises with regards to input materials may force suppliers to produce and deliver these at the lowest cost possible. As a result, efficiency within such (upstream industry) suppliers' production set-up may be relatively high. Also, the relative size of large enterprises may be a sign of financial strength, and capital may be far more readily available for investments in technology than is the case with smaller players.

6.5 Contribution by SMEs

Small and Medium Enterprises play an increasingly important role in the economic development of South Africa. Statistics show that SMEs contribute approximately 42% of South Africa's GDP, and contribute approximately 50% to employment in the private sector (GCIS, 2000).

SMEs form 41% of all South African registered enterprises and provide over 34% of all employment. If one includes Micro enterprises in this definition (i.e. expands the SME definition to SMMEs) this figure increases to 59% (number of enterprises) and 42% (employment) (DTI, 1998b).

Within the textile industry, SMEs play a vitally important role. SMEs are widely attributed to being able to absorb much of the downscaling in employment numbers that has occurred in the formal sector. In the textile industry, most enterprises are SMMEs (74%), although the actual figure may well be higher. Using statistics contained in the latest (1996) census of manufacturing as a basis for calculation, SMMEs contribute 37% to total employment, and 25% to the total value of sales (Statistics South Africa, 2000a). Again, considering the inherent limitations and time lag of official statistics, these figures may in reality be significantly higher. Entrepreneurship and increasing government support for SMEs is leading to a shift from 'big-business' enterprises to smaller-scale niche-market producers. This view is supported by various sources, including by the *Textile Federation* (Claassens, 2000) and the *Department of Trade and Industry* (House, 2000).

Definitions of SMEs and SMMEs are contained in Appendix 01.

Significance of SMMEs in the South African Textile Industry			
Total Textile Sector		**Contribution Towards Total by SMMEs**	
Total No of firms	+/-700	% of Total Number of Textile Firms	74 %
Employment offered	55,081	% of Total Employment	37 %
Value of sales (R Million)	10,164	% of Total Value of Sales	25 %

Table 6.3 Significance of SMMEs in the South African Textile Industry (Statistics South Africa 2000a, 2001c; Textile Federation, 2001a)

6.6 Employment Characteristics, Employment Costs and Legislation

6.6.1 Employment Characteristics

Textile employment numbers have been decreasing consistently in the 1990's. Due to the incorporation of the former 'independent' homelands into South African statistics from 1996 onwards, previous figures are not directly comparable. The 1995 figures are however, for interest's sake, provided (65,410), as they show the situation regarding employment just prior to the 'amalgamation' of record keeping. Between 1996 and 2000, employment in the textile industry decreased from 77,402 to 55,081, a loss of 22,321 jobs or 29%. At the same time the clothing industry too shed a number of jobs, although the decline was not as significant (1996:194,908 to 2000:137,260 – a decline of 'only' 8%).

Year	Number of Workers	
	Textiles	**Total: Manufacturing**
1995	65,410	1,418,981
1996	77,402	1,442,234
1997	75,844	1,381,873
1998	56,491	1,339,082
1999	53,951	1,304,008
2000	55,081	1,287,655

Note: As a result of the inclusion of establishments situated in the former TBVC states from 1996, the figures from 1996 onwards are not directly comparable with those from the previous years. 1995 data are included here for general interest.

Table 6.4 Textile Industry Employment Figures (DTI, 2001b)

The steep drop in 1998 is particularly significant, and translates into a year-on-year decline of over 25%. Since then, the employment situation has largely stabilised. The issue of job-losses in the textile industry was again raised during the final phases of negotiations of the SADC trade agreement. In one of the few cases of industry and trade union solidarity, spokespersons for SACTWU and SACTMA (South African Cotton Textile Manufacturers' Association) expressed serious concern about the apparent non-reciprocal nature of the trade agreement (Sithole, 2000). SACTMA was especially concerned about the possibility of illegal imports entering the local market (through lax customs controls in neighbouring African states) and harming the textile industry, while SACTWU feared this would inevitably lead to serious job losses.

In the *spinning, weaving and finishing* sector, most enterprises employ between 10 and 200 employees, making most of them small *and* medium sized enterprises. Enterprises falling into the *other textiles* group for statistical purposes (i.e. automotive textiles, blankets, carpets, cordage, stuffed articles etc.) are mostly *small-sized* enterprises in terms of employment numbers (i.e. <50 employees). Part of the reason for this may be the relatively capital-intensive nature of spinning, weaving and finishing processes, which is evident from research undertaken by the DTI and IDC (1998). In the *spinning, weaving and finishing* sector, capital costs amounted to 15% of total cost, while *other textiles* had average capital input costs of 9%. Usually, the larger the company the greater the *access* to capital, as well as its ability to carry and absorb capital input costs. The table below shows the employment-size distribution of enterprises in the textile sector.

Employment Size Group / Number of Employees	Spinning, Weaving and Finishing	Other Textiles
	No. of Establishments	No. of Establishments
0 - 9	14	191
10 - 19	18	115
20 - 49	33	122
50 - 99	18	53
100 - 199	22	35
200 - 299	11	13
300 - 399	8	4
400 - 499	5	4
500 - 999	13	11
1.000 +	9	2
TOTAL	**151**	**550**

Table 6.5 The Distribution of Employment amongst Textile Industry Enterprises (Statistics South Africa, 2000a)

By showing the characteristics of the data contained in the table 6.5 graphically (Fig. 6.3), it is easy to see that the 'spinning, weaving and finishing' (SWF) sector generally consists of larger enterprises (in terms of the number of employees) than the 'other textiles' (OT) sector.

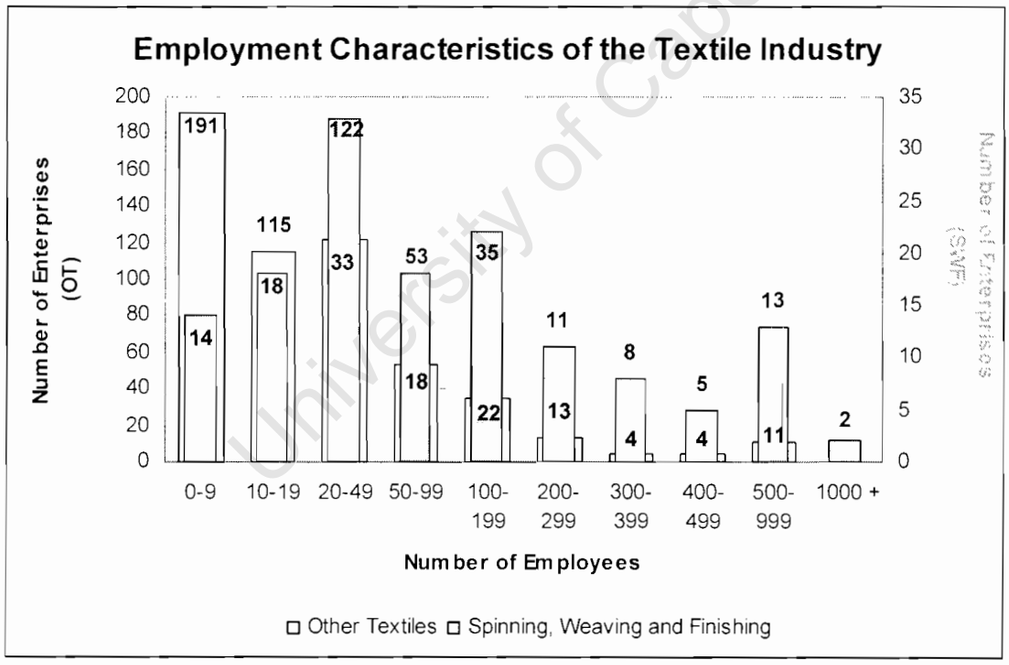

Fig. 6.3 Employment Characteristics of Textile Industry Enterprises (Statistics SA, 200a)

Both the textile and clothing industries in Kwazulu / Natal generally consist of enterprises that have lower numbers of employees than the average in other centres, in particular the Western Cape (Prinsloo, 2000). Ownership in that region is generally family orientated, although there are also a few large companies which have their manufacturing base there (e.g. Coastal Textiles (currently in liquidation), Frame, DaGama etc.). The fact that the clothing manufacturing sector is relatively strong in the Western Cape, in addition to numerous national clothing retail chains having their headquarters there, has created the need for a strong textile manufacturing base in the Western Cape region. Similar characteristics may not necessary apply to that region's clothing industry, where a significant proportion of the industry may in fact be small and medium-sized enterprises as well as numerous, often unaccounted for, home-based and micro-enterprises.

Textile Federation estimates (1998b) show that in excess of 360 000 jobs are in some or other way dependent on the South African textile industry. This includes the over 55.000 directly employed by the industry, and further accounts for those employed in related industries (including approximately 80.000 workers employed on the cotton farms). These figures may be exaggerated due to rapid increases in the globalisation of trade and the resulting decreasing reliance on a country's own industries as a source of raw materials and sources of demand. Nevertheless, the importance of the textile industry in terms of direct and indirect employment numbers is significant. 'Related' industries are those industries that have a direct association with the textile industry, including the following:

- ***Agricultural** Sector* (mainly cotton farming)
- *The **Chemical Processing** Industries* (manufacture of synthetic fibres and textile processing chemicals
- *Downstream **Manufacturing*** and the ***Retail** trade* which utilises the various textile products
- ***Transport** and **Packaging** Industries*

Table 6.6 Employment in 'Related' Industries of the Textile Industry

Employment in the textile industry is not very concentrated, especially in relation to many other industry sectors. The table below shows employment concentration ratios for the 2 textile industry sub-sectors, as well as providing the concentration ratios for a number of other industries. Notably, both the textile and clothing industries show evidence of a flat employment concentration structure, meaning that most of the industries' employment is not centred around a very small number of large enterprises.:

Employment Concentration Index: Contribution to Total Employment by Largest Textile Industry Enterprises		
Sector	**Contribution by Largest 4 Enterprises (CR4)**	**Contribution by largest 10 Enterprises (CR10)**
Sub-sector: *'Spinning, Weaving and Finishing'*	32 %	52 %
Sub-sector: *'Other Textiles'*	19 %	31 %
Weighted Average (Sub-Sector Ratio = 0.53 : 0.47)	**26 %**	**42 %**
Beverages	46%	75%
Paper and Paper Products	40%	55%
Rubber Products	51%	73%
Motor Vehicles	58%	93%
Clothing	15%	22.5%

Table 6.7 Employment Concentration Index: Contribution to Total Employment by Largest Textile Industry Enterprises (Statistics South Africa, 2000)

In the '*spinning, weaving and finishing of textiles*' sub-sector (151 enterprises), the largest 4 enterprises (in terms of employment) collectively employ 32% of total employment, while the largest 10 account for 52%. In the *'other textiles'* sub-sector (501 enterprises), the concentration is 19 % and 31% respectively. The ratio of employment between the two sub-sectors (*'spinning, weaving and finishing of textiles'* and '*other textiles*') is 53% : 47%.

Collectively, the weighted average concentration of the largest 4 enterprises is 26 % of employment, while the largest 10 enterprises in the textile industry collectively employ approximately 42 % of the total workforce. Employment concentrations in the other industries shown are significantly greater, meaning that a far larger portion of the total workforce is concentrated in a small number of enterprises.

6.6.2 Employment Costs

The South African textile industry is shown to be a medium to low-wage employer, paying significantly lower wages than the manufacturing sector average. The latest available statistics show that textile industry employees earned a derived average of R42,530 per annum, compared to the manufacturing sector average of R55,080. Total gross salaries and wages using constant year 2000 prices, and total employment numbers, were used as a basis for this calculation. While lower wage rates may possibly lead to competitive advantage in the textile industry, they need to be compared to wage rates in other countries. These countries include competing countries (in terms of export market share as well as those successfully penetrating the South African market), as well as those countries that make up the main destination of South Africa's exports.

International wage rate comparisons are discussed later in this section. Of additional importance are unit labour costs, as these go beyond the traditional output per employee productivity calculations.

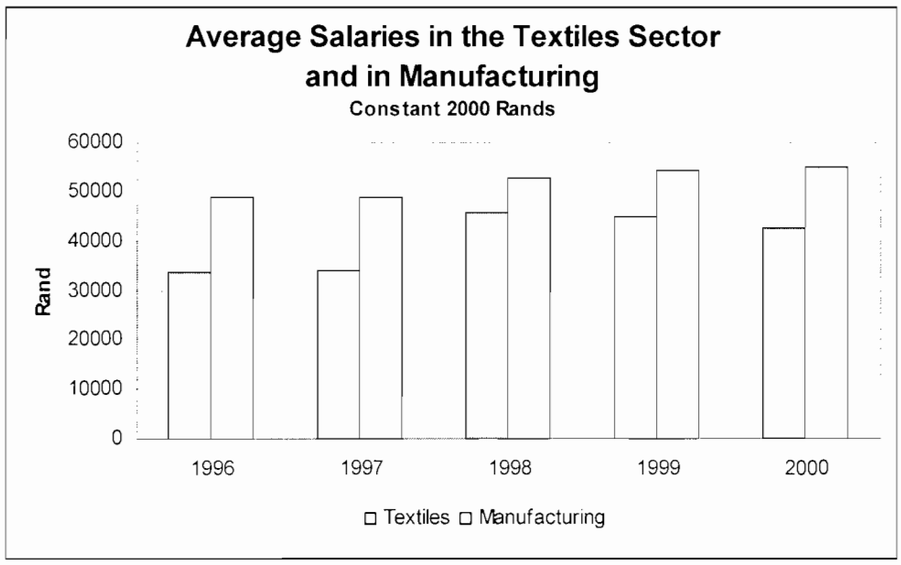

Fig 6.4 Average Salaries in the Textile Sector and in Manufacturing Overall (DTI, 2001b)

Fig. 6.4 shows that average salaries and wages have since 1996 closely followed the trend set by the manufacturing sector average. However, textile industry salaries are still below that of the manufacturing sector average. Lower wages may point to relatively low skills requirements in the industry. As the sector makes predominant use of a semi-skilled workforce, it is likely to offer lower average wage rates. A low skills base may also have been perpetuated by a lack of training and investment in human capital.

In the textile industry, wages are set in three ways (Jafta and Jeetah, 2001):

- Through negotiations in the bargaining councils, which consist of representatives of labour, employers and government. The wages set are for certain areas of jurisdiction, and are typically the highest of the three;
- Through the Ministry of Labour, which sets minimum wages for certain industries outside the bargaining council process. These are typically lower than the first instance.
- Through determination by company owners and managers, where these are in decentralised areas outside of the jurisdiction of the bargaining council. These are typically the lowest of the three instances.

Labour costs are likely to increasingly be affected by the impact of HIV / AIDS. As the disease is not notifiable in South Africa, the potential impact of it on the textile industry (and the economy as a whole) is difficult to quantify. However, increased absenteeism and sick leave will no doubt have a negative impact not only on labour costs and productivity, but also on skills levels.

A study conducted by the *Textile Industry Training Board* (TITB) into the training needs of the textile industry found 82 % of the workforce to have no more than a South African Matriculation certificate as their highest qualification (cited by Maree, 1995). Only 3.3 % of the workforce had received technical or tertiary education and training. The study's sample size encompassed 31 companies representing 32 000 employees (which at the time represented approximately a third of the total textile industry workforce), and covered a wide range of textile products. This makes the survey results fairly representative of the textile industry as a whole.

A more recent research in the clothing and textile industries found consensus opinion that overall skills levels of the South African workforce were good (Bhorat, 1998). As most firms committed workers to a period of in-house training, Bhorat found a close correlation between the intensity and length of training provided, and the type and range of garments produced. However, in the higher-skilled occupations, the source found that skill levels in the textile and clothing design fields in particular were not satisfactory and not good enough for a "firm wanting to be globally competitive". This and the previous study show results that seem a contradiction, but may indicate that overall skills level have, in fact, increased significantly between the early and late 1990s.

A study in the textile industry relating to the formal training aspects of the workforce found that most workers received formal in-factory training, while only a very small number had obtained training in foreign institutions. A significant percentage had, however, obtained some other form of training in South Africa (Jafta and Jeetah, 2001).

Formal Training in the Textile (and Clothing) Industries		
Type of Training	% of Textile Workers Trained	% of Clothing Workers Trained
Formal in-factory schooling	85 %	25%
Outside training in RSA	26%	0.5%
Training in foreign institutions	0.5%	0%

Table 6.8 Formal Training in the Textile and Clothing Industries (Jafta and Jeetah, 2001)

Labour organisations have had a strong impact on labour costs through collective bargaining and wage negotiations with the industry. Difficult trading conditions have lead to a reduction in the bargaining power of labour organisations such as SACTWU (*South African Clothing and Textiles Workers Union*), although they continue to exert some pressure on both the government as well as employers. However, significant job losses, mainly as a result of the removal of protectionist measures (tariffs etc.), have resulted in limited 'partnership' between industry and employee organisations in the late 1990s.

For this purpose it is of value to analyse labour costs not only within the industry and country, but also on an international scale. Of particular importance are the labour costs of South Africa's trading partners and competitors. This includes the countries that the South African textile industry trades with, using as criteria the destination of exports and origin of imports. More specifically, of most importance are those countries that compete with South Africa for export market share, as well as being a source of much of the country's imports (such as China, Indonesia etc.). The table below provides an overview of manufacturing labour costs in a cross section of countries that are directly or indirectly relevant from the South African perspective (NPI, 1998). While the data is somewhat outdated (1996), and refers to average manufacturing sector remuneration costs, it is nonetheless though of as being a valuable indicator for the purpose of comparison and trend analysis.

World Remuneration Costs in US $ per Hour					
Country	**1996 US $**	**1995 US $**	**1993 US $**	**1991 US $**	**% over / under relative to South Africa (1996)**
South Africa	**4,2**	**4,9**	**4,5**	**4,2**	**N/a**
Indonesia	0,3	0,3	0,3	0,2	**-95%**
China	0,4	0,3	0,5	0,3	**-90%**
Malaysia	1,5	1,6	1,8	1,7	**-65%**
Taiwan	5,8	5,8	5,2	4,4	**+40%**
Hong Kong	5,1	4,8	4,3	3,6	**+21%**
Italy	17,5	16,2	15,8	18,6	**+ 310%**
Germany	31,9	32,3	25,5	22,7	**+660%**
United Kingdom	14,1	13,7	12,4	13,8	**+235%**
United States	17,7	17,2	16,5	15,6	**+320%**
France	21,2	21,3	17,9	15,3	**+400%**

Table 6.9 World Remuneration Costs in US $ per Hour (NPI, 1998)

From table 6.9 it becomes obvious that great disparities exist in world remuneration costs. Being based in US $, they are useful by allowing for a direct comparison.

It is clear that some of the Pacific Rim countries, notably Indonesia, China and Malaysia, have remuneration structures that are far lower than those found in South Africa. For example, remuneration (in US $ per hour) in Indonesia and China is less than 10 % of that in South Africa, while Malaysia's is less than 33 %. In other words, to be directly competitive with China and Indonesia from an (internationally comparable) labour cost perspective, South Africa would need to generate 10 times as much output per work-hour. This ignores further variables such as an efficient labour – capital mix, state subsidies and incentives, as well as logistics costs, all of which may have a significant effect on overall productivity.

Indonesian and Chinese products are both making major inroads in the South African textile industry, especially with large-scale fabric imports. These countries' products have both been cited as posing very significant problems for the South African textile industry, as they are seen to be flooding the domestic and regional market through legal and illegal imports brought about in part by ineffective customs controls. These figures paint a bleak picture for the South African textile industry, should it ignore the signals and not reposition itself in such a way as to make maximum use of its inherent strengths and potential capabilities. It will not be able to directly compete with many of these Pacific Rim countries in most product categories, especially in light of the fact that protectionist measures previously in place (i.e. tariffs, subsidies, quotas etc.) are increasingly unavailable to the domestic textile industry, in line with GATT / WTO requirements.

Table 6.9 above also shows the relatively high labour remuneration costs in some of South Africa's developed nation trading partners, including Italy, Germany, the United Kingdom and the US. This may give the South African textile industry a comparative advantage with regard to labour input costs in the textile production process, and could allow the domestic textile industry to target these markets as export destinations. Notwithstanding the developed world's comparative advantage in the availability of capital (at far more competitive interest rates etc.), as well as its highly skilled workforce, its disadvantage in terms of labour remuneration could well be a major opportunity for the local industry. Recent developments, such as the EU / South Africa FTA and especially the opportunities presented by the US Africa Growth Act in terms of increased and duty-free market access, adds further impetus to this possibility.

6.6.3 Labour Legislation

South Africa is in the process of amending much of its labour legislation, a process that is both arduous and controversial. The country's political past, coupled with politically strong labour unions (the Congress of South African Trade Unions is a political alliance partner to the country's ruling party) and a business community pressing for greater wage and labour flexibility, has delayed large parts of the implementation of revised labour legislation.

Most quarters of the manufacturing sector, and the business community as a whole, view South Africa's legislative climate in terms of labour laws as restrictive and inflexible, especially in the light of an unemployment rate estimated to be in excess of 35%.

Labour flexibility, one of the keys to improved manufacturing sector performance, is now more 'elusive' than ever. These stringent laws, which are making it very difficult for manufacturing enterprises to retrench workers, even when trading conditions would dictate so, are often cited as the main reason for a negative employment growth rate. In some cases this has also lead to disproportionate levels of investment in capital equipment (with its related taxation benefits), or even continued use of outdated and inefficient technology, rather than the employment of additional workers.

The most important parts of labour legislation that have been enacted in recent years are the *Labour Relations Act* (LRA) (Act 66 of 1995), the *Skills Development Act* (SDA) (Act 97 of 1998), the *Skills Development Levies Act* (SDLA) (Act 9 of 1999), the Employment Equity Act (EEA) (Act 55 of 1998) and the *Basic Conditions of Employment Act* (BCEA) (Act 75 of 1997).

The main focus of the SDA is the improvement of the skills level of the South African workforce to ensure greater productivity of workers and competitiveness of employers. This is an extremely important focus area especially with respect to the South African textile industry.

The SDLA (1999) is the financing counterpart to the SDA (1998), which, once fully implemented, are together set to replace the Manpower Training Act of 1981 (Act 56 of 1981). The SDLA makes provision for employers to contribute 0.5% of their monthly payroll as a skills levy (with effect from 1 April 2000), and 1% with effect from 1 April 2001. The money collected in terms of this provision is intended to finance the Sector Education and Training Authorities (SETAs), which were established during 2000 (see also Section 5.7). A dedicated 'Clothing, Textiles, Footwear and Leather' (CTFL) SETA was established under the provisions of this Act.

The LRA (1995) came into effect in November 1996 and enables the establishment of collective bargaining councils, and also stipulates the inclusion into these councils of small and medium-sized businesses (CGIS, 2000). The Employment Equity Act (1998) aims to achieve demographic representivity in employment and seeks to correct past discriminatory employment practices. The Act compels employers to take certain affirmative action measures. Unless these measures are complemented by skills training, any measures forcing companies to take (possibly economically unfeasible) decisions regarding employment are unlikely to be in the best interests of the textile industry, in particular with regard to productivity and international competitiveness.

6.8 Investment in Capital Equipment

Investment levels in manufacturing sectors such as the textile industry depend on numerous macro- and microeconomic variables. Investment levels, as the term is used here, refers to capital expenditure on new assets.

While all prospective investment decisions need to be sensible from a purely financial perspective, they are strongly influenced by the prevailing business environment. Variables that determine the business environment and business confidence include factors such as current and expected political stability, the outlook for industrial activity and the manufacturing in particular, labour market conditions, interest rates, tax incentives etc. South Africa has gone through a transitional period from a political, economic and social perspective, leading to significant changes in the business environment that firms find themselves in. Probably the most important new challenges faced by the manufacturing sector, and the textile industry in particular, are those brought about by globalisation. Firms need to become internationally competitive to remain in business in the longer term. This often means that significant investments have to be made, on the one hand in new technology, as well as to ensure the maintenance of existing capital equipment. This helps to ensure that the industry does not become uncompetitive from a technological perspective.

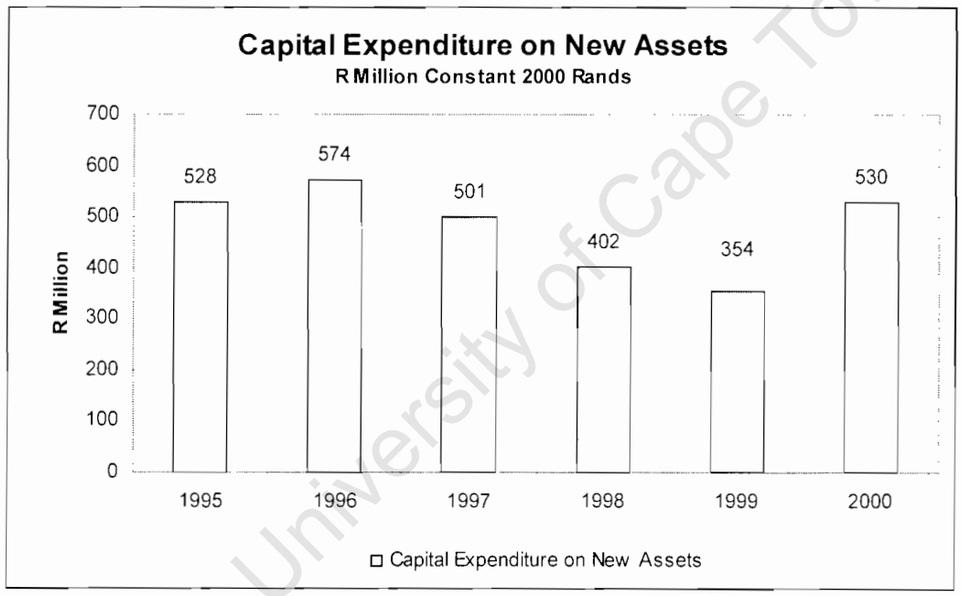

Fig. 6.5 Investment Levels in the South African Textile Industry (DTI, 2001b)

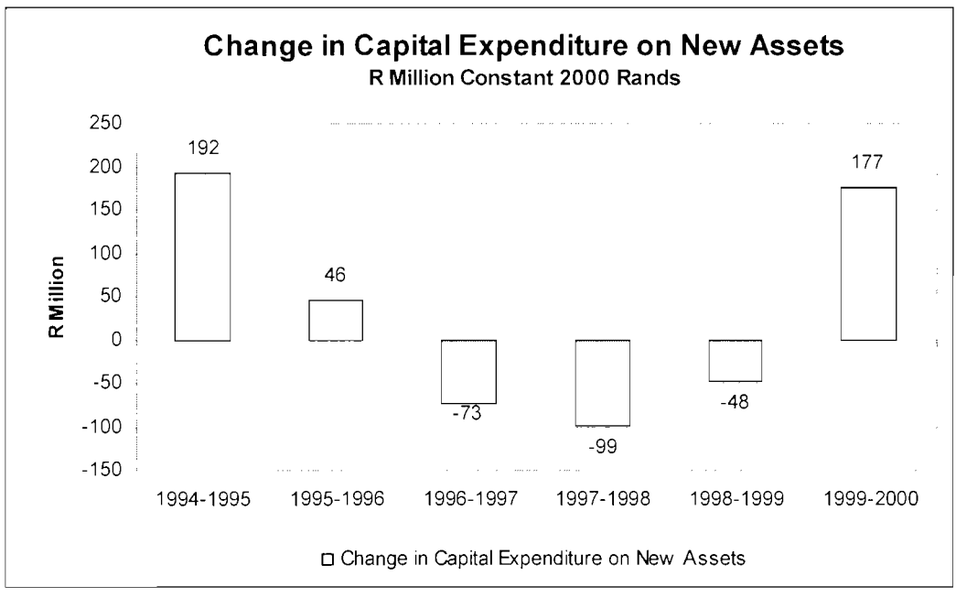

Fig. 6.6 Change in Expenditure on Capital Equipment from Previous Year (DTI, 2001b)

Investment levels in the textile industry have fluctuated significantly during the last decade. Important determinants of the level of investment include the cost of capital, i.e. the cost of investment, as well as the exchange rates. The cost of investment is measured mainly by the prevailing interest rates, which are examined in Section 10.4.

A high, or increasing, interest rate nearly always has a negative effect on investments. Especially during 1998, when interest rates reached their highest levels in decades, manufacturers often found it difficult to justify investments as their cost made many of these investment risky or simply unfeasible. This had negative direct and indirect consequences for the industry, especially from an investment and production perspective, but also as a result of depressed retail and consumer demand. This period is characterised by slowing investment levels (Fig. 6.5), and negative year-on-year changes (Fig. 6.6).

Occasionally interest rates and investment levels move in the same direction. This (unlikely) scenario is then usually due to the presence of external variables which may distort the inverse relationship between interest rates (cost of capital) and investments. These may include changing economic conditions and outlook for a particular industry sector, special tax incentives, subsidies and rebates and low-cost finance options available to manufacturers.

As a large proportion of the textile industry's equipment needs originate from abroad, exchange rate fluctuations have in most cases worked in South Africa's *dis*favour.

The decline of the Rand against the US $ has been very significant (especially in 2001), although the local currency's less rapid decline against the Euro has mitigated the situation somewhat with respect to imports originating from that region (esp. machinery, dyes etc.).

Two, or possibly three trends are visible in Fig. 6.5 (seen together with Fig 6.6). The first, positive trend refers to the time period 1994-1996, and shows significant increases in capital expenditure. In this period manufacturers in the textile industry invested significant amounts in the maintenance and upgrade of machinery and other items of a capital nature.

The second trend refers to the period from 1996 to 1999, and shows declining levels of capital expenditure, and consequently negative year-on-year changes in investment (Fig. 6.6). Actual Rand values for 1996 show that R574 Million was spent on capital equipment by the textile industry, whereas in 1999 this amount had decreased to R354 Million, a decrease of 38%. This is significant, not only in absolute terms, but also in relation to the con-current decrease in industry protection through trade barriers, as well as globalisation patterns. Especially the later, downward trend in capital expenditure indicates that the South African textile industry may not be equipping itself adequately to increase its international competitiveness, especially in light of significantly greater domestic competition from imports.

The third possible trend may technically be to early to identify. However, the latest year under review (2000) shows a significant increase in expenditure on new capital equipment, and appears to reverse or at least halt the previous negative trend. Capital expenditure in 2000 amounted to R 530 Million, which is a 50% increase from the previous year (1999). While this development may indicate renewed confidence by the textile industry, it may also be a result of dissatisfaction with domestic labour laws, or simply lagged investment that was overdue from a previous period.

6.8 Utilisation of Production Capacity

The South African textile industry has a significant amount of idle production capacity, owing to a number of reasons. Idle capacity, or "under-utilisation of production capacity" as it is described by Statistics South Africa, is normal for the manufacturing sector within an economy, but it is the degree of (and reasons for) such under-utilisation that need to be analysed for any conclusions to be drawn.

The South African textile industry has typically utilised approximately 80% of its production capacity, although this has been fluctuating depending on what time of the year the measurement is taken. In the year 2000, for example, higher productive capacity was utilised in the early months, while this dropped slightly towards the end of the year.

As can be seen in the table below, average utilisation of production capacity for the South African textile industry was lower in the year 2000 than it was in 1999. Year 2000 figures showed that 79.9% was utilised, while during 1999 81.6% was utilised (Statistics South Africa, 2001a). The year-on-year decrease amounted to just over 2%. The greatest reason for the under-utilisation is "insufficient demand", which in 2000 accounted for 16% of the total under-utilisation of 20.1%. Next were unclassified "other" reasons, followed by a shortage of raw materials (1% of 20.1%).

Utilisation of Production Capacity							
Year	Utilisation (Percent)	**Reasons for Under-Utilisation (Percent)**					
		Total Under-Utilisation	Raw Materials	Skilled Labour	Unskilled and Semi-skilled Labour	Insufficient Demand	Other
1999	81.6	18.4	0.5	0.0	0.0	15.9	2.0
2000	79.9	20.1	1.0	0.2	0.0	16.0	2.9

Table 6.10 Utilisation of Production Capacity in the Textile Industry (Statistics South Africa, 2001a)

The reasons for the under-utilisation show clearly that the South African textile industry is not constrained by either the absence of skilled and unskilled labour, or by a shortage of raw materials. However, idle capacity is largely due to insufficient demand. However, the figures do not reveal the reasons for the insufficient demand, although they are likely to be owing to a lack of competitiveness, and widespread availability to consumers and downstream industry of (imported) substitutes. The level of competitiveness, in turn, depends largely on the availability and availability of the factors of production. Therefore "insufficient demand" is likely to be largely due to un-competitively priced (or un-productive) inputs such as labour and raw materials.

6.9 Review of Publicly Listed South African Textile Companies

While most South African textile enterprises are privately owned, there are a few that are publicly listed companies. These enterprises collectively make up a significant portion of total textile industry sales, employ a large number of employees, and invest significant amounts in capital equipment. It is frequently the case that the holding company of a group of companies is listed on the stock exchange, while having majority shareholding in a number of smaller unlisted subsidiary enterprises.

6.9.1 The Textile Industry on the Johannesburg Stock Exchange

Although not forming an important part of this research, for the sake of completeness a brief overview of the textile industry on the Johannesburg Stock Exchange (JSE) is provided here. The largest textile companies in South Africa are all publicly listed, and the performance of the textile industry has a bearing on their performance on the JSE, and vice versa.

The JSE is where shares of a public company are traded in South Africa. The textile industry is grouped together with the clothing and footwear industries, which combined make up the *Clothing, Textiles and Footwear* (CTF) sector on the JSE. Fig. 6.7 depicts financial averages for this sector from the past 5 year period (ending 2000), and shows the average values of the share price index of this sector, as well as dividend and earnings yield performance for the corresponding period. These data reflect investor sentiment about the industry, which is consequently reflected in a company's (or sector's) share price index.

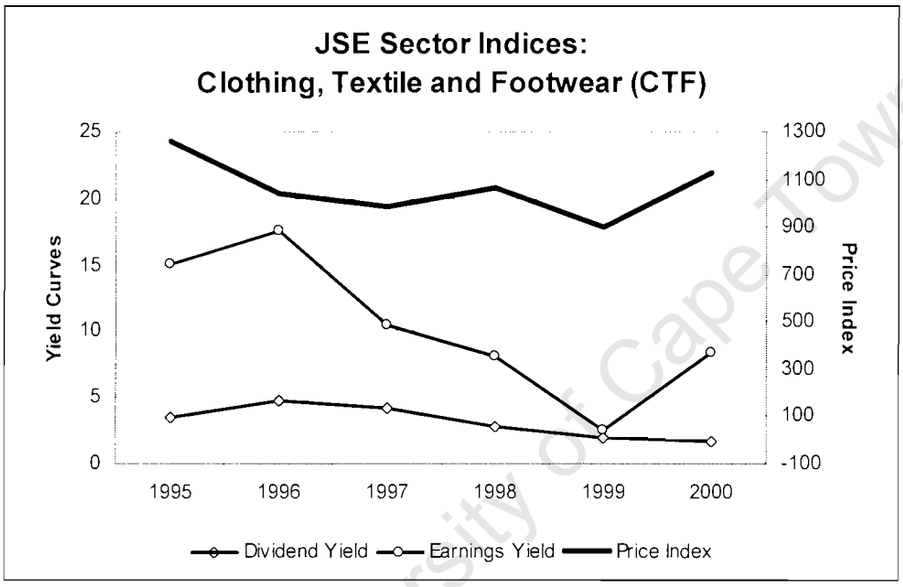

Fig. 6.7 JSE Sector Index: Clothing, Textiles and Footwear (The Investor's Group , 2000)

Investors rate individual companies' and sectors' share price and investment potential not only according to company (and sector) earnings, but also according to the *expected* future earnings and growth prospects. In the case of the clothing, textiles and footwear (CTF) sector, the general consensus appears to have been that in *real* terms, trading conditions and growth prospects, for whatever reasons, have declined. It can be seen that, in nominal terms, the CTF index was lower in 2000 than at the start of the period under review (1995).

In an inflationary environment, this means that in real terms the sector has not performed well, and / or investors may have lost confidence in this sector to perform well in the near future.

Both the dividend yield (DY) curve, and especially the earnings yield (EY) curve, have shown negative performance over the past years, although data for the year 2000 appears to reverse this trend. The EY curve reflects the net earnings growth (or decline) of the sector for the period under review, while the DY curve maps the performance of declared company dividends (as company profits earnings stagnate, so does their ability to declare dividends). The performance of the yield curve (being the average for the CTF sector) is an indication of a sector whose publicly listed companies are, on average, struggling to provide shareholders with an acceptable return on investment.

The *Clothing, Textile and Footwear* (CTF) sector presently consists of 13 listed enterprises (2000), which are in the form of independent companies or a part of a group (i.e. holding company with subsidiaries). A company listed under the CTF sector may also have subsidiaries and / or investments in companies operating in other sectors; on the converse, companies listed in other sectors may also, through shareholdings in other companies, have interests in the CTF sector. A brief overview and financial data of the listed CTF companies is provided in Appendix 05.

This chapter has shown that the textile industry is pre-dominantly located in the provinces of Kwazulu/Natal, the Western Cape and Gauteng, using as a basis Statistics South Africa data. In terms of output and growth patterns, Kwazulu/Natal is the "dominant" location of the industry. Industry sales have been relatively stagnant in nominal terms in recent years, largely as a result of the increased competition from foreign produced textiles, originating especially from the Far East. The downscaling of tariff barriers has had a significant impact on the industry as it struggles to remain internationally competitive. Employment levels have decreased markedly over the past decade, and insufficient demand has lead to significant idle capacity. However, many textile manufacturers have started looking at the export market for new markets, and on the whole, the industry is making good progress in exploiting export market opportunities. The performance of South Africa's trade in textiles is reviewed and discussed in the following chapter.

7. South Africa's International Trade in Textiles

7.1 Overview and International Trade Performance

Textiles are of significance in South Africa's trade account. South Africa is a **net importer** of textiles, and not once during the 1990's did exports exceed imports. Exports of textiles have increased strongly throughout the period under review (1995-2000), while textile imports have remained largely unchanged (measured in constant year 2000 Rand).

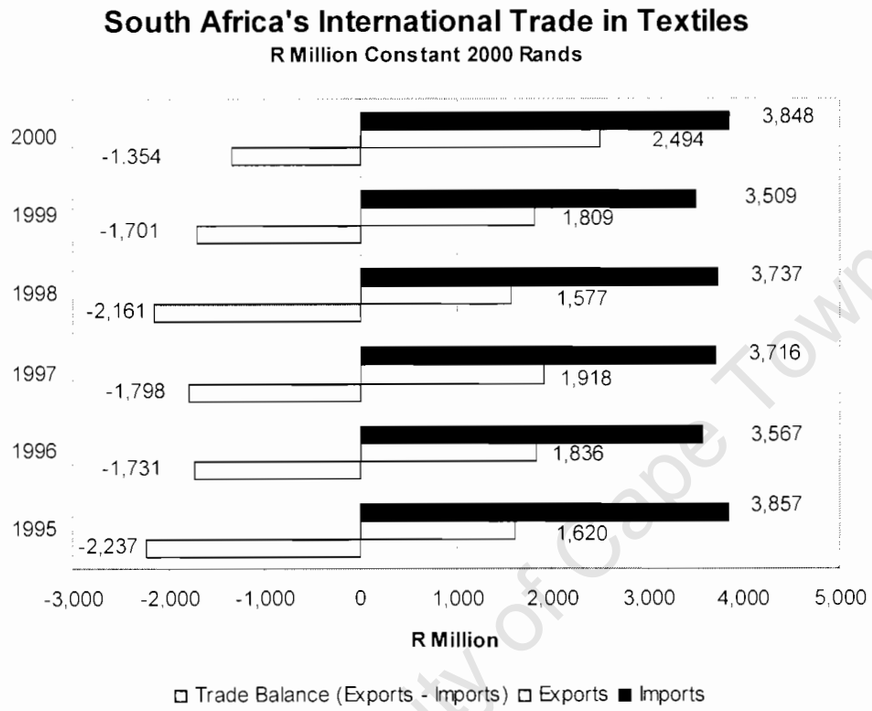

Fig. 7.1 South Africa's International Trade in Textiles (DTI, 2001c)

In the period 1998-2000 a clear trend has started to emerge. With imports remaining largely unchanged and showing little direction, exports have grown strongly. Exports in 2000 were almost 60% above the levels achieved in 1998, leading to a narrowing of the large textile trade deficit (difference between exports and imports). The trade deficit decreased by almost 40% between 1998 and 2000, from R2,1 Billion to R1,3 Billion.

The growth of textile exports, in particular over the past two years, is encouraging. However, the full picture emerges only on analysing the composition of this trade, and the number of exporters. At present, (significant) textile exports are still mainly concentrated among a relatively small number of firms. There are approximately 25 South African firms that are significant exporters of textiles (Brink, 2001). This is indicative of a bias by textile manufacturers towards domestic markets, and only limited export penetration. At the same time, the fact that exports have increased by 60% over the past 2 years, and while a significant number of firms are not yet export-oriented, at least a strong basis exists for future export growth. There is already evidence that the number of exporters is growing (Brink, 2001).

However, any trade data, in particular that of the textile industry, needs to be seen with the following *caveat*: one of the most serious problems identified by textile industry stakeholders and analysts is the very significant flow of illegal textile imports into the country. Textile industry import data are thus very likely to be understated, and may consequently not reveal the true picture. Insufficient customs controls, 'round tripping', false invoicing, fraud and legislative loopholes continue to pose significant problems for the domestic textile industry, and textile company closures have often been reported to be as a direct result of illegal imports flooding the market and providing unsustainable competition.

South Africa is an overall net exporter of textile fibres and yarns, and an overall net importer of fabrics and made-up textile articles. A clear pattern has emerged, showing that the 'adding' of value, which forms the basis for industry and GDP growth, appears to occur outside South Africa's borders, whereas significant focus of the local industry (or at least, its ability and capacity) still seems (on the whole) to be on basic raw material processing, and exports thereof (House, 2000). The domestic textile industry's main exports are fibres (wool, cotton and synthetic), as well yarn (wool, cotton and synthetic) (Brink, 2001). Fabrics and made-up textiles, while also exported to a smaller extent, are major constituents of textile imports. These are the textiles where a larger proportion of value is added.

It is a common trend amongst developing countries that industrial production focuses largely on lower value-added production. However, the South African textile industry need not fall into this category and should focus on reversing this trend, and focusing instead on moving up the value-chain towards higher value-added production. South Africa, being a developing country yet with many developed country characteristics, has a comparative advantage relative to many other developing countries, especially in terms of infrastructure, capital availability, technology and telecommunications. On the other hand, it appears to be at a significant comparative dis-advantage in other respects, for example in terms of the labour cost per unit value of output.

Table 7.1, based on Customs and Excise data, shows the South African textile industry's main trading partners in the import / export of fibres, yarns, fabric and made-up textile articles, and provide some overall statistics regarding the international trade of textiles and textile articles (House, 2000).

Description	IMPORTS	EXPORTS
Fibre	United Kingdom; Zambia; Japan; Germany	Italy; France; United Kingdom; Germany; Taiwan
Yarn	Taiwan; Netherlands; Germany; Korea; Italy	USA; United Kingdom; France; Brazil
Fabric	Korea; Taiwan; China; Indonesia; Hong Kong; India	United Kingdom; Australia; Zimbabwe; USA
Made-Up Textile Articles	Malawi; Pakistan; China	United Kingdom; USA; Zambia; Mozambique

Table 7.1 Origin and Destination of South African Textile Industry Imports and Exports (House, 2000)

While Table 7.1 indicates the main sources and destinations of textiles (and intermediate textile articles) by category, Fig 7.2 provides a clearer indication of textile trade between South Africa and its trade partners as a whole. They analyse the structure of the trade regime of the textile industry, and shed light on both South Africa's strengths in penetrating export markets, as well as the domestic industry's vulnerability to competition. Using the actual trade figures provided by the Department of Trade and Industry (2000) (based on Department of Customs and Excise data), they allow a closer analysis of South Africa's known and unknown strengths and weaknesses in the textile trade arena, and should form an underlying basis for an industrial trade strategy for the textile industry.

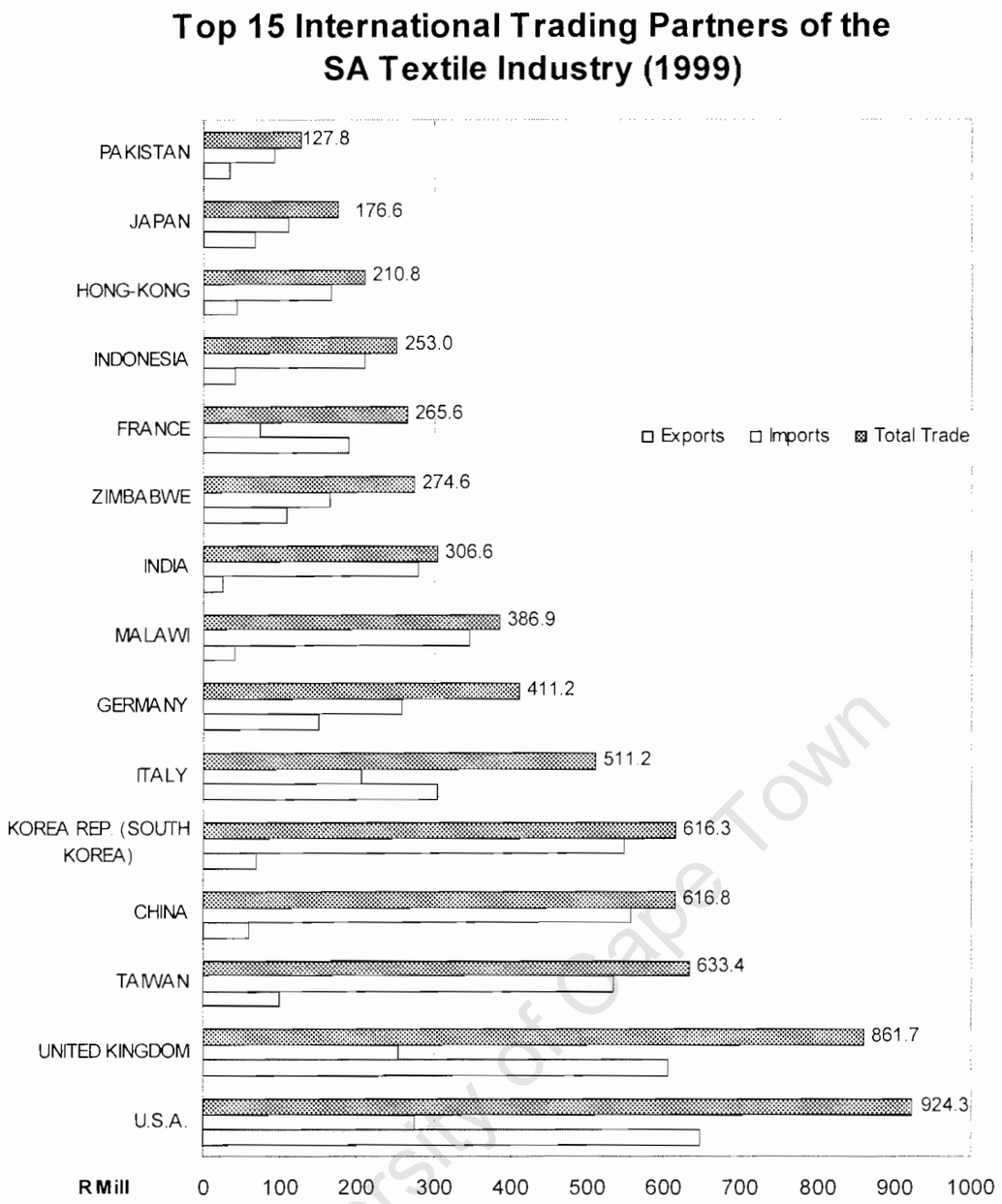

Fig. 7.2 **International Trade: Overview of the Top 15 International Trading Partners of the South African Textile Industry (DTI, 2000)**

Fig. 7.2 shows, in ascending order of total trade, the South African textile industry's main international trading partners (see Appendix 04). The largest two individual trade partners are the United States and the United Kingdom, which together accounted for 21% of the total trade in textiles.

Notably, these figures are brought about mainly by strong export performance by the South African textile industry to these countries (*Note* [2]).

The remaining 3 countries making up the top 5 trade partners, namely Taiwan, China and the Republic of Korea (South Korea), together accounted for a further 22% of total trade in textiles with South Africa. These figures are brought about mainly by their countries' strong penetration of South African import markets, together accounting for 33% of South African textile industry imports. Year 2000 statistics, using Jan '00 – May '00 data, reveal that this figure has increased to 37%.

The only 2 African countries within this list (of 15 largest trading partners) are Malawi and Zimbabwe, which together make up 8% of the total trade. Both these countries are net exporters to South Africa, with especially the inclusion of Malawi being notable in the sense of that country's relatively insignificant manufacturing sector (the data is consistent with widespread suspicion and evidence that Malawi is being used by Far East countries as a conduit front for the channelling of textiles and garments into South Africa).

From a trade balance perspective, South Africa is a net exporter of textiles especially to the US and Europe (mainly the UK, Italy and France), which together accounted for almost half (49%) of South Africa's textile exports during 1999 and leading to a combined R 942 Million trade surplus. The enactment of the African Growth and Opportunity Act (AGOA) is likely to lead to significant increases in trade with the US over the next few years (see Section 8.3 for a discussion on the AGOA).

In terms of the trade balance from a net import point of view, the vast majority of *net* imports originate from China, Taiwan and the Republic of Korea (South Korea), accounting for 32% of total textile imports into South Africa, and leading to a R 1.4 Billion trade deficit with these countries during 1999. Trade figures from of the first part of 2000 (January – May) reveal that imports from these countries increased significantly to over 37% of the total, illustrating the Far East region's increasing penetration of the South African textile market (DTI, 2000 internet). Such statistics also reveal the comparative advantage in the production of textiles that these countries have over South Africa, which finds itself having to deal with higher labour and capital costs, and a work ethic that probably differs significantly from that found in many Pacific Rim countries. Compounding this trend is the fact that many textile imports filter into the country illegally, either through insufficient customs controls at South Africa's ports of entry, or through schemes of arrangement whereby trade channels between South Africa and some of its neighbouring SADC countries are exploited. In many cases, only an insignificant amount of value is added in the region

[2] The statistics use as a basis the South African textile industry's trade with its largest 25 trading partners, meaning that an (insignificant) amount of trade data is not accounted for here.

(perhaps only a label or a button sown on), and free trade agreements in the region used to penetrate the South African textile market.

Brief Overview of Observations of Textile Trade with Main Industry Trading Partners				
Observation	**Countries involved**	**Statistical Observations**	**Profile of Goods from SA perspective**	**Profile of Country / Region**
Top 2 trading partners in terms of overall value	USA, UK	21% of total trade	Fibre imports & exports, yarn, fabric & made-up textile exports	Industrialised, high labour costs, discerning consumers
Next 3 most significant trading partners (see above)	Taiwan, China, Korea	22% total trade, largely imports (33% of total imports to South Africa)	Yarn, fabric & made-up textile imports, fibre exports	Low labour costs, state subsidised production, medium-low quality
African trading partners within top 15	Malawi, Zimbabwe	Textile trade deficit with both countries, accounts for 8% of total trade	Mainly imports of made-up textile	Relatively low industrial capacity, low labour costs
Top net importers *from* South Africa (~ South African Export Market)	US, Europe (UK, France, Italy)	49% of total SA textile exports (53% first half of 2000), R 942 mill. surplus	Mainly fibre & yarn exports, as well as fabric and made-up textiles	Industrialised, high labour costs, discerning consumers
Top net exporters *to* South Africa (~ Origin of South African Imports)	China, Taiwan and Republic of Korea (South Korea)	32% total textile imports (37% first half of 2000), R1.4 Billion textile trade deficit	Yarn, fabric and made-up textile imports to South Africa, some fibre exports	Low labour costs, state subsidised production, medium-low quality
Trade with the US and EU	US, EU countries	Trade surplus of R375 Million (US) and R 260 Million (EU) in 1999	Mainly fibre & yarn exports, as well as fabric and made-up textiles	Industrialised, high labour costs, discerning consumers
Overall Trend	**South Africa is a net importer of textiles; imports originate mostly in Far East countries (value-added items), while exports go mainly to the US and EU (lower value-added items)**			

Table 7.2 Brief Overview of Observations of Textile Trade with Main Industry Trading Partners (own observations, based on DTI, 2000)

Table 7.2 briefly outlines some of the main observations presented by the available statistics and previous discussion. One of the most important observations lies in the fact that the trade profile of the South African textile industry is, on the whole, rather polarised (naturally, strong exceptions do exist). Not only is South Africa a net importer of textiles, but higher value-added items (for example made up textile goods and fabrics) originate mostly from the Far East countries including China, South Korea and Taiwan. On the

other hand, most exports were in the form of fibres and yarns, being textile articles that typically have less "value added" and are closer to their "raw form".

Economic theory clearly illustrates the benefits of adding value: the greater the value added, the more significant the benefit to the economy. For example, a quantity of cotton that is exported in its 'raw' form, will be far less beneficial to a country's economy than a quantity of cotton that has undergone various cleaning and similar processes, is then transformed into a yarn, from which a fabric is made, and finally used in the manufacture of a finished (and perhaps exported) textile article. The trade pattern presents compelling evidence that the South African textile industry is "missing out" on potentially significant benefits that would be achieved by a greater orientation towards *local* value-added production.

A wide range of factors influence not only the direction of textile trade, but also the volume. The South African textile industry has been faced by a challenging trading environment in recent years, especially as a result of the downscaling of protectionist trade barriers that shielded it from some of the foreign pressures. In the textile industry survey conducted in the first quarter of 2001 (see Appendix 11), only a relatively small percentage (19%) of respondents said that they achieved significant international sales. All respondents that had indicated significant exports also said that international sales had increased significantly over the past 12 months, although the major sales volume increases were achieved in the local market (39%). None of the respondents noted a *decrease* in international sales (against 25% saying that local sales had decreased), possibly in part due to a significant devaluation of the local currency *vis-à-vis* the US $ (and consequent gains in competitiveness). Notably, 40% of respondents forecast that the international market held the greatest opportunities for the textile industry over the next few years. 75% of respondents were either actively researching international textile markets, or were at least considering it.

7.2 Regional Trade Issues

Regional trade plays a reasonably important role in the composition of total trade of the South African textile industry, although its role is not entirely positive. Of the textile industry's 20 largest trade partners (see Appendix 04 for full list of trade volumes), only four countries (Zimbabwe, Malawi, Mozambique and Zambia) fall into this category. The combined trade with these four countries nonetheless amounted to almost R350 Million (DTI, 2000).

South Africa is signatory to a large number of international and regional trade agreements, which is one of the main drivers of the integration and expansion of trade. The most significant regional agreement is the SADC FTA liberalises the trade of most trade items between SADC member states. With South Africa being the largest and most developed economy in the region, trade inflows and outflows from the country dominate regional trade. South Africa absorbs much of the region's output of raw materials, while being a

net-exporter of manufactured goods to its regional neighbours. While South Africa has traditionally had a very complex tariff structure and protectionist trade regime, much of these have fallen away or are in the process of being dismantled. The eradication of these trade barriers, especially in the light of the SADC free-trade agreement (FTA), is set to have a significant effect on two-way trade between South Africa and its northern neighbours. However, trade agreements have also lead to new and increased problems, especially relating to the large amounts of both legal and illegal textiles entering South Africa, seriously undermining the industries profitability and consequently competitiveness. As with most trade agreements between more than 2 countries, the expected benefits are likely to be severely undermined with the existence of just one weak link. Unfortunately, inconsistencies of SADC member countries' external trade agreements, as well as weak customs controls and fraud at some ports of entry, are negatively affecting the South African textile industry.

Trade liberalisation coupled with the introduction on 1 September 2000 of the SADC FTA will only be successful if any remaining tariffs and subsidies amongst the member states (i.e. Southern African Development Community) are brought in line and become consistent with one another, as well as consistent externally (to avoid "round-tripping" or "trade-arbitrage". At the moment, different countries within SADC still have a different external tariff regime. To reap the benefits of greater regional integration, the opening of markets to increased competition requires greater intra-country consistency and needs to be done on a reciprocal basis. Only this would be beneficial to the textile industry and halt some of the significant exploitation and illegal imports taking place at present. Also, the 'dumping' of textiles (whereby exporting countries flood the local market with textiles often sold at below-cost so as to protect their domestic markets from an over-supply) is a threat that needs to be monitored and controlled.

For example, Malawi's import tariffs are far lower than those of South Africa, which has had the effect that extensive use has been made by foreign companies to import textiles into Malawi. Once there, usually only an insignificant amount of value is added (or even none at all), and the SADC free trade agreement (as well as bilateral agreements between Malawi and South Africa) then allows free onward movement of these goods to South Africa. Recent trade data revealed that Malawi had become the "largest supplier of imported clothing and textiles to South Africa" (Textile Federation, 1999b), but there is little doubt that only an insignificant portion is manufactured in that country itself.

Some stakeholders have expressed strong reservations about the SADC free trade agreement. SACTWU, the leading union in the textiles (and clothing) industries, is a case in point. Reasons include strong fears about job losses in this sector in particular, arising mainly from concerns about illegal imports and dumping in the absence of strict customs controls (Business Day, 1999).

7.3 Revealed Comparative Advantage in South Africa's Textile Trade

'Comparative Advantage' (CA) is a term used in economic models that seeks to explain the trade flows between 2 or more different regions or countries. It provides an indication of the direction of net trade flows (as a whole, or per product category), as well as offering insight into the magnitude of the composition of such trade. In economic terms, the underlying model shows how 2 or more countries that are able to produce a variety of products at different costs will be better off if they engage in trade, than they would have been under 'autarky' (a situation of no trade) (Lipsey et al, 1990). CA is a relative concept that is not distorted by absolute values, and thus allows one to make deductions about trade patterns by it providing insight into directional changes of net trade. This makes the CA concept a valuable tool for policy makers and the textile industry.

There are two possible formulas for calculating comparative advantage, namely the 'Balassa' formula (Balassa, 1966) and the 'own-trade' formula (*both cited by* Valentine, 1998) (see Appendix 06). The ratios generated by these formulas are commonly referred to as the RCA (revealed comparative advantage). According to the Balassa formula, "if the share of a country's exports to total trade in that commodity were higher than the share of its total exports in world trade, the exporter had a comparative advantage in the export of that commodity" (Balassa, 1966). The presence of CA would, in this case, generate a quotient of >1, with 1 being the cut-off point (i.e. no CA). A quotient of between 0 and 1 would indicate the absence of comparative advantage.

The 'Own-Trade' formula is slightly different from the Balassa formula, but nevertheless has been shown to have a strong positive correlation with it. To generate the RCA quotient using the 'own-trade' formula, the proportion of the *difference* between exports and imports is related to the *sum* of exports and imports. In other words, the *net exports* are divided by the *total trade*. By definition, the range of RCA quotients would always lie between –1 and +1, as the difference between exports and imports has to be smaller than its sum. A positive value (i.e. $0 < RCA < 1$) would indicate the host country's comparative advantage in the trade of a certain good / commodity, whereas a RCA value less than 0 (i.e. $0 > RCA > -1$) would indicate that no comparative advantage exists. Naturally, where the (export and import) base values that are used refer to *total* industry exports, the RCA would in turn reflect on the industry as a whole. Small-scale deviations may occur amongst individual product categories. The formula can equally be applied to certain product categories only, resulting in a RCA quotient that refers only to such products.

The international trade by the South African textile between 1998 and mid-2000 has been analysed in Table 7.3 using trade data provided by the DTI (2000). For this analysis, use was made of the '*own-trade*' formula described above, for the following reasons:

- Ease of use;
- Ease of interpretation;
- Strong correlation of ratios and results with those obtainable by using the 'Balassa' formula;
- Applicability of this formula to the available data.

Although the statistics in this analysis are from the same source as that used for the overall international trade analysis in Section 7.1, it should be noted that the data are not entirely compatible. The reason for this is that the previous data referred to *total* textile trade, whereas for the purposes of this analysis the data had to be country-specific. For the RCA analysis, data were only available for the largest 25 trading partners, thus ignored the 'lesser' trade partners whose individual contribution was not significant.

The South African Textile Industry's Revealed Comparative Advantage in International Textile Trade							
Column: A	**B**	**C**	**D**	**E**	**F**	**G**	**H**
Direction of Net Trade Flow (2000)	**RCA Ranking 2000 (1999)**	**Top 10 Trade Partners (2000)**	**Trade Partner**	**RCA (2000)**	**RCA (1999)**	**RCA (1998)**	**Directional Change 1998 - 2000**
NET EXPORTS							
Net Exports	1(1)	10	**France**	0.428	0.437	0.425	↑ net exports
Net Exports	2(3)	2	**U.S.A.**	0.377	0.405	0.345	↑ net exports
Net Exports	3(2)	3	**U.K.**	0.367	0.410	0.334	↑ net exports
Net Exports	4(5)		**Zambia**	0.307	0.130	-0.093	↑ net exports
Net Exports	5(4)	6	**Italy**	0.219	0.195	0.004	↑ net exports
Net Exports	6(6)		**Mozambique**	0.199	0.041	-0.032	↑ net exports
Net Exports (largely 1-way)			**Mauritius**	1	1	1	N/a
Net Exports (largely 1-way)			**Brazil**	1	1	1	N/a
Net Exports (largely 1-way)			**United Arab Emirates**	1	1	1	N/a
Net Exports (largely 1-way)			**Ireland**	1	1	1	N/a
Net Exports (largely 1-way)			**Kenya**	1	1	1	N/a
Net Exports (largely 1-way)			**Canada**	1	1	1	N/a
Net Exports (largely 1-way)			**Australia**	1	1	1	N/a
NET IMPORTS							
Net Imports	-1(-2)	1	**China**	-0.845	-0.808	-0.803	↑ net imports
Net Imports	-2(-5)	5	**Taiwan**	-0.826	-0.686	-0.769	↑ net imports
Net Imports	-3(-6)		**Indonesia**	-0.793	-0.671	-0.791	↑ net imports
Net Imports	-4(-4)	4	**Korea Rep. (South Korea)**	-0.763	-0.777	-0.902	↓ net imports
Net Imports	-5(-1)	8	**India**	-0.725	-0.832	-0.812	↓ net imports
Net Imports	-6(-7)		**Belgium**	-0.633	-0.424	-0.254	↑ net imports
Net Imports	-7(-3)		**Malawi**	-0.595	-0.790	-0.822	↓ net imports
Net Imports	-8(-10)		**Spain**	-0.382	-0.236	-0.107	↑ net imports
Net Imports	-9(-9)		**Japan**	-0.287	-0.249	-0.300	↓ net imports
Net Imports	-10(-8)	7	**Germany**	-0.287	-0.264	-0.287	unchanged
Net Imports	-11(-11)	9	**Zimbabwe**	-0.056	-0.201	-0.389	↓ net imports
Net Imports (largely 1-way)			**Pakistan**	-1	-1	-1	N/a
Net Imports (largely 1-way			**Hong Kong**	-1	-1	-1	N/a
Net Imports (largely 1-way			**Netherlands**	-1	-1	-1	N/a
Net Imports (largely 1-way			**Thailand**	-1	-1	-1	N/a
Net Imports (largely 1-way			**Turkey**	-1	-1	-1	N/a
Net Imports (largely 1-way			**Portugal**	-1	-1	-1	N/a
Net Imports (largely 1-way			**Malaysia**	-1	-1	-1	N/a
Net Imports (largely 1-way			**Switzerland**	-1	-1	-1	N/a
Net Imports			**RCA Total Textile Trade**	**-0.225**	**-0.247**	**-0.179**	**↑ net imports**

Table 7.3 **South Africa's Revealed Comparative Advantage in International Textile Trade (own calculations, based on data provided by DTI, 2000)**

Table 7.3 above provides an overview of the South African textile industry's trade performance between 1998 and the first half of 2000. Column **A** shows the direction of the net trade flow for the last period under review (2000). 'Net exports' indicates that during this period the South African textile industry's exports to the trade partner in question (column **D**) exceeded the imports *from* that trade partner. 'Net imports' refers to a situation where the opposite applies.

The background data is provided in Appendix 04, which lists the largest 25 trade partners of the textile industry (year 2000) in terms of exports, imports, net trade (exports less imports) and total trade (exports plus imports). Accordingly, where the magnitude of textile trade with certain countries is too insignificant to fall into the 'top 25', data availability is limited to one-way trade flows. This makes the calculation of a meaningful RCA impossible, because the resulting RCA indicator would either be +1 or –1. Where this is the case, from a policy perspective, secondary analysis is required to relate the direction of the trade flow to the magnitude of total trade. As a consequence this allows a better understanding of the true situation relating to the composition and direction of trade.

In column B of table 7.3, the resultant RCAs of South Africa's textile industry trade partners are ranked according to year 2000 and 1999 values. The latest RCAs reveal that, in descending order, the greatest (positive) export to import ratios were achieved with France (RCA=0.428), the US (RCA=0.377), UK (RCA=0.367), followed by Zambia, Italy and Mozambique. Of these countries, significant trade volumes were only achieved with the Euro-zone countries and the US, with the US and UK being the domestic industry's 2nd and 3rd greatest trade partners.

On the negative ranking side (so-called negative due net trade *in*flows), in descending order, are China (RCA= -0.845), Taiwan (RCA= -0.826), Indonesia (RCA= -0.773), South Korea (RCA= -0.763) and India (RCA= -0.725). (China, Taiwan, Korea and India also fall into the textile industry's top 10 trading partners by volume). This is followed by Belgium, Malawi, Spain, Japan, Germany ('top 10') and Zimbabwe ('top 10'). The other countries in this group have not been ranked as trade is essentially one-way, not significant, and would lead to a meaningless RCA.

The net-import trade partners outnumber the net-export trade partners falling into the list (see Appendix 04) by 19 to 13. Collectively, the composition of trade is consistent with this, as is shown with the net-trade figure revealing increasing net-imports and a resultant negative RCA (-0.225). An analysis of the net-import RCAs (column E) reveals that the absolute RCA of the 1-7th ranked net import trade partners exceeds that of the highest ranked net import trade partner. This bears testimony to the fact that the trade with those countries that are the source of our net imports is highly skewed or one-sided. Of special concern is the trade deficit with China: the composition of trade reveals not only a very highly negative RCA (i.e. net imports), but it is also South Africa's largest trade partner in terms of total textile trade.

From this data an overall picture emerges. The RCA of overall textile trade, which includes trade figures from those countries where *individual* RCA calculations would be meaningless, shows an overall RCA of -0.225 for the year 2000 (1999 = -0.247 and 1998= -0.179). This evidence re-enforces the fact that South Africa is a net importer of textiles, but also that the composition of its textile trade has changed. The South African textile industry appears to have become more competitive in our traditional European markets and the US, but has lost competitiveness to the Far East countries such as China and Taiwan.

Trade patterns with the South African textile industry's most significant trade partners reveal that CA exists mainly with European countries and the US (as the 2nd largest individual trade partner). Also significant is the fact that, without exception, the composition of trade with all those trade partners that have positive RCA values has in fact become more positive from a South African perspective (column H in Table 7.3). This means that exports have been making up an increased share of total trade with *these* countries between 1998 and mid-2000. On the other hand, comparative *dis*advantage exists largely with Far East countries, most notably China, Taiwan and Korea.

These findings can be qualified by comparing the data in Table 7.3 above with Table 7.1 in Section 7.1). Whereas RCA data reveals CA in textile trade with mainly European countries and the US, and *dis*advantage mainly with Far East countries, it is important to identify the composition of this trade from a product perspective. Table 7.1 shows that on a whole, lower-value imports originate from Europe, while higher value imports are sourced from the Far East. Malawi, albeit also a source of higher value-added products, is included here under 'Far East' due to the problems and uncertainty regarding the true origin of imports from that country.

From an export perspective, the spread is slightly more evenly distributed, making a clear-cut distinction between lower and higher-value added products unreliable. However, it would appear that significant amounts of yarn and fabric, which are medium value-added products, are exported to the US and Europe by the South African textile industry. South Africa's existing CA in trade with these regions, together with the lowering of trade barriers following the enactment of the AGOA, is likely to further enhance export growth and provide greater opportunities for higher value-added production.

The status quo of South Africa's textile industry trade, as indicated by the RCA indicators, is likely to be in no small measure due to the significant differences in labour costs between South Africa and its trading partners. International trade has lead to the establishment of 'commodity prices', meaning that the price for a (*homogenous*) good is similar in different parts of the world. If this were not so, international trade, through increasing exports and imports, would ensure that prices would converge in the long run (naturally, this assumes zero transaction and logistics costs). The overview of world remuneration costs in Section 6.6

shows South Africa lagging far behind the Pacific Rim countries, whereas it leads Europe and the US. While the available data is fairly outdated (1991 – 1996), it nevertheless reveals that the Far East countries (essentially Indonesia, China and Malaysia) have a very large comparative advantage over South Africa in terms of hourly remuneration costs. On the other hand, South Africa has a significant advantage over Europe and the US, whose labour remuneration costs are up to 660% of that of South Africa (this of course does not reveal actual productivity levels, which influence the more important comparative variable, namely cost per unit of output). Nevertheless, almost without exception (compare Table 7.3 with Table 6.9), RCA quotients are consistent with the pattern of $-based remuneration costs.

There are a number of other factors impacting on the degree of RCA with South Africa's textile trading partners. Changes in RCA are likely to result from changes in domestic competitiveness, as well as further devaluation of the real effective exchange rate (REER). Export performance in relation to the REER is discussed in Section 7.7. Issues relating to competitiveness were analysed to some extent by Jafta and Jeetah (2001), who found a number of issues that were impacting negatively on the South African textile industry's competitiveness:

Competitiveness Issues in the South African Textile Industry
High labour costs, especially in relation to the low-cost producers of the Far East
Slow and complicated procedures for clearing exports
Requirements to purchase locally produced cotton before being able to import
Lack of effective protection against illegal and undervalued textile and clothing imports
Sometimes poor on-time delivery performance
Low disposable income amongst South African, (resulting in extreme price consciousness and ready market for cheap imports)
High crime rate and a perception of breakdown of law and order, hindering foreign direct investment
High duties on imported fibre, yarn and fabric (although these duties are in the process of being scaled down significantly)

Table 7.4 Competitiveness Issues in the Textile Industry (Jafta and Jeetah, 2001)

The RCA findings, together with the data on remuneration costs, would thus suggest that the South African textile industry is most likely to achieve export growth through a focus on European and US markets. However, it will continue to be under threat from the low-cost producers of the Far East, and needs to focus strongly on improving the factors that are presently undermining its international competitiveness.

7.4 Foreign Penetration of Local Markets and the Problem of Illegal Imports

Cheap and illegal imports into South Africa and the region as a whole are regularly cited as being a major threat to the South African textile and clothing industries. Following years of isolation in a protectionist, inward-oriented policy environment, the competitiveness of the domestic industry is, on the whole, still below the standard required to successfully compete with imports. This is especially true at the lower end of the market, where South Africa's labour un-competitiveness is borne out the greatest.

There is strong market penetration of the South African textile market, especially by the low-cost producers of the Far East. China, South Korea, Taiwan and Hong Kong have been growing their textile exports to South Africa, and hold a comparative advantage in the production of such goods over this country. This advantage largely relates to much lower per unit labour costs in these countries. 1996 data suggests that average per-hour labour costs, measured in US $, were $4.20 in South Africa, whereas Indonesia's were $0.3 p/h, China's were $0.4 p/h and Malaysia's were $1.5 p/h (see Section 6.6) (NPI, 1998). While hourly labour costs provide only an indication of a comparative advantage in this respect (of essence would be per-unit labour costs), they do show the difficulty encountered by many South African industries to match the Far East productivity, especially in the lower end of the market (i.e. lower priced / lower quality goods) where significant homogeneity exists between product and price considerations are of vital importance. Past evidence has often shown the landed (imported) cost of a textile article to be lower than the local cost of inputs for a similar product. Perhaps this highlights heavy subsidisation within the supply chain of the textile industry in these countries, or even the vast advantage in terms of manufacturing productivity. The end-result, however, is that the domestic textile industry has to deal with the issue of 'cheap imports' continuing to enter the country on a broad scale, and trade barriers from the government to protect local markets to decrease. It is proposed (and discussed later) that one way to deal with this issue, besides all the possible improvements in manufacturing productivity, is a re-orientation of the South African textile industry towards the higher end of the market, greater value-added production, niche markets and exports.

Illegal imports are also having a serious impact on the textile industry, and the consequences are filtering through to both upstream (e.g. raw material producers) and downstream (e.g. clothing) industries. The majority of these illegal imports emanate from the Pacific Rim countries, most notably China. For example, significant state subsidies paid out to textile manufacturers in some countries have allowed a number of textile articles to be shipped to South Africa at a lower cost that manufacturing such items locally ("dumping"); likewise, illegal imports are those that are shipped into the region under false pretences or under wrong declarations, do not meet regional rule of origin requirements, and are then distributed locally.

7.5 Re-Orientation towards Niche- and Export Market Penetration: Issues and Possibilities

The South African textile industry has to take some important decisions, especially relating to its focus and mindset. Most notably, the traditional trade restrictions that have shielded the domestic industry from many of the influences of foreign competition are now no longer there. The global trade era has arrived, and threatens to swallow up those firms that are unable or unwilling to adapt.

Many of the crucial issues facing the South African textile industry have been discussed in detail, including the impact of FTAs, trade flows and increasing import penetration, illegal imports and inadequate customs controls, exchange rate fluctuations, labour issues and raw material issues. Other important considerations are also faced by manufacturers contemplating a foray into export markets: the identification of export markets following extensive market research, transport insurance, credit guarantees, lead and delivery times, shipment, logistics, bureaucracy and legislation. Other important issue affecting market access include market demands, in other words producing what the market requires as opposed to hoping to sell what one produces. Different markets have different product demands, although it can be generally said that the more developed an economy, the higher the quality and environmental demands, and more stringent the requirements relating to production times and capacity.

To many manufacturers these issues appear to be insurmountable or highly intimidating, and they prefer instead to focus on the (domestic) market as it is more familiar. Indeed, these are important issues that need to be dealt with. Increasing globalisation and the rapid downscaling of protective barriers in the domestic market is increasingly exposing the domestic textile industry to foreign competition and influences, and un-competitiveness (in whichever form) is becoming unsustainable in the medium to long term.

The analysis of net trade flows has shown increasing import market penetration of foreign textile producing firms. As a large proportion of these imports are lower-value products originating from Far Eastern countries (mainly China, Taiwan and Korea), this is exposing South Africa's complete inability to compete in the lower end of the textile market. The term 'lower end' as used here refers to those products and materials where relatively little value has been added (domestically). For example, a lower-end product could be a plain, low grade, commodity-type textile product, whereas a move up the value chain may include products such as technical textiles (e.g. medical textiles, or those possessing special qualities such as high fire resistance, and/or having been produced according to certain minimum, internationally recognised environmental standards). Moving up the value chain, as opposed to trying to compete with the abundance of lower-end imports penetrating South African textile markets, implies that domestic producers would be less exposed to the strengths of those countries where most of South Africa's imports originate from.

The Far-Eastern countries, such as China, are highly competitive in the lower market segment, due to a variety of reasons. These include labour rates that are on average only approximately one tenth of South Africa's, ensuring a significant productivity advantage over South Africa. Added to this is the fact that some of their raw material inputs are state subsidised, their factories are achieving economies of scale (with or without idle production capacity), and logistics costs and methods are optimised. China's imminent accession to WTO member status is likely to substantially increase its accessibility to foreign markets, which will in turn place major strain on many textile producers around the world. This will have an impact on the South African textile industry. South Africa simply can not compete in this market segment, as the landed cost of some of these countries' products is often below the input cost of the domestic equivalent. As most of the value-added in this market segment is pure labour cost and material input cost (but off a low cost base), only those countries with a competitive advantage in these cost segments will be internationally competitive. As highlighted above, labour costs are up to 95 % lower in Far East countries, and raw material inputs are frequently state subsidised. South Africa's labour is not nearly as price-competitive as in some countries of the Far East (most notably China and Indonesia), and raw material inputs are rarely state subsidised (although restrictive cotton procurement regulations are sometimes accused of not allowing South African producers to fully take advantage of the lowest possible prices abroad. In the lower market segment input cost differentials of even a few cents (or percent) can lead to domestically manufactured textiles being un-competitive. Following on from this, at issue is also that South African consumers are generally highly price-sensitive, especially in the lower end of the market where products may largely be low-value, fairly homogenous items. Only after price considerations follow quality and perhaps environmental issues.

As touched on briefly above, an important issue that has characterised large parts of the South African textile industry is still its widespread inward looking focus. While historical reasons such as economic and political sanctions, as well as protective trade barriers and infrastructure constraints may have been the reason for this inward-looking approach, it is nonetheless hampering the industry's integration into international textile markets. Significant segments of the domestic textile manufacturing base are still pre-occupied with 'fighting' imports, rather than producing according to their (potential) strengths. Producing for export and niche markets requires greater emphasis on market research, production efficiency and a focus on quality, as only a combination of these and other factors will ensure sustainable success. This is often perceived as a barrier to re-focussing: change is met with resistance.

The analysis of Revealed Comparative Advantage (RCA) has shown comparative trade advantage (in terms of textile trade) with a number of developed countries, most notably the US and parts of Europe. Qualitative analysis of the trade flows with countries where comparative advantage exists reveal a pattern whereby these countries are mostly developed countries (the U.S. and parts of Europe), or regional countries (mainly SADC member states).

Textile trade *deficits*, on the other hand, exist largely with the Far Eastern countries. The South African textile industry's focus should thus be on the former.

The key strategy for South African textile producers is thus to move away from predominately producing textiles for the market segments where the significant competitive dis-advantage is held. Instead, producers should focus on the existing trade advantage that exists mostly with developed countries, and produce products that harness the local industry's competitive advantage in *these* markets, including labour costs (although low labour productivity is still negating the potential benefits of lower labour costs than in developed countries), potential quick (order) turnaround times, relatively short lead times and flexible production quantities. Other critical issues relating to export markets include the need for timeous and reliable delivery, emphasis on quality (and quality consistency), meticulous packaging, regular customer feedback evaluation and good after sales service. From an administrative side, the importance of studying customs requirements (regarding content declarations, correct HS codes etc.) can not be under-estimated, as non-compliance and contraventions can result in costly hold-ups, rejections or even confiscation of an exporter's goods. These factors should form the basis of effective targeting of selected niche and export markets.

7.6 The South African Exchange Rate and International Currency Fluctuations

There has been a general, long-term decline in the value of the Rand against most international currencies, although this decline was most pronounced against the US $ (most international currencies have been under pressure as a result of a strong US $). However, as the US $ is generally regarded as the international currency in terms of which (internationally) traded commodities are priced, this has been a mixed blessing for South Africa. In many instances, this has had a progressively negative (in the sense of becoming more expensive) effect on raw material prices (in Rand terms), or has at least exacerbated price movements or lessened price advantages. Capital inputs (machinery and equipment), much of which is imported from abroad, has become more expensive.

The decline of the South African currency against the currencies of the major industrialised countries, especially the United States but also Europe (in particular the United Kingdom and Germany, which are important sources of machinery and equipment, as well as textile dyes), has made capital goods significantly more expensive in ZA Rand terms. The movement of the South African Rand against the US$, UK pound and Euro is shown in Fig. 7.3 (SARB, 2000). Typically, the industrialised countries have a comparative advantage in the production of capital goods, and thus serve as an important exporter of machinery and equipment to developing countries such as South Africa.

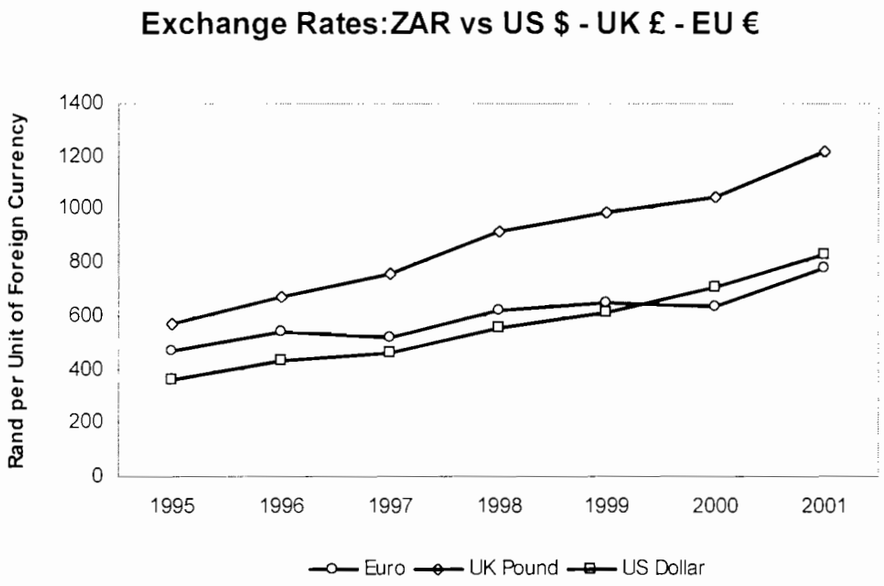

Fig. 7.3 Currency Exchange Rates: ZAR vs US $; EU €; UK £ (Financial Mail, 2001)

The decline in the exchange rate, on the other hand, makes South African produced goods less expensive in the export market. Industry often blames the declining exchange rate for difficult trading conditions. However, any decline in the exchange rate should be of net benefit to exporters in this regard, as the capital component of manufacturing costs should be only a fraction of the total cost of the product. A lower exchange rate makes the South African textile industry's output more competitive internationally, and thus allows for better market penetration abroad. At the same time it allows greater domestic market penetration by foreign textiles, especially in the lower end of the market which is very price-sensitive. FTAs with a number of countries and regions are likely to complement South Africa's competitiveness, especially in light of the strong performance of the US $ and other trade partners.

7.7 Export Performance and Movements of the Real Effective Exchange Rate

A country's exchange rate has a strong bearing on a particular industry's trade performance. The higher the cost of purchasing one unit of foreign currency, the higher the (local) cost of the imported goods and services. The devaluation over time of the currency is thus likely, all other things being equal, to lead to a decrease in imports and an increase in exports. Conversely, the appreciation of the currency relative to that of its trade partners is likely to lead to imports becoming relatively cheaper (measured in the local currency), and exports becoming relatively more expensive (measured in the foreign currency).

A measure commonly used by economists to measure the real performance of, in this case South Africa's, currency against that of its trade partners, is to use the real effective (or "trade weighted") exchange rate (REER). The REER measures a country's currency with respect to a "basket" of currencies, based on the relative contribution of trade with South Africa's major trading partners. In this case, the REER refers to the overall REER, not the REER of the textile industry alone (data unavailability required the use of the *general* REER). Determining the relative contribution, or "weight" of each currency, can be problematic. This is especially so for South Africa and many other (mainly developing) countries where a large proportion of the country's exports are commodities and thus dollar denominated (Tsikata, 1999). The South African Reserve Bank's estimates are that 70-75% of the trade by South Africa is invoiced in US dollars (Tsikata, 1999).

There is, however, not necessarily a uniform response to changes in the REER. This means that imports and exports have different elasticities of response to changes in the exchange rate. For example, much needed capital equipment or emergency spare parts may be less responsive (i.e. lower elasticity) to changes in the REER (especially a devaluation of the REER) than luxury or commodity items. Exports of textiles and clothing may respond to a greater degree (higher elasticity) to changes in the REER: a devaluation of the REER should lead to strong export growth, whereas REER appreciation will force foreign importers to source these products elsewhere, or produce the products themselves. As will be seen later, this assumption has not necessarily held for textile exports, although there are signs of increasing elasticity in response to movements in the REER.

Fig. 7.4, shows that there has been a gradual but consistent decline in the real value of the exchange rate in the period under review (1994-2000). The values of the REER and textile and clothing exports were indexed to make them comparable, with the first Quarter values of 1995 made the base (= 100). They are based on constant year 2000 Rand values.

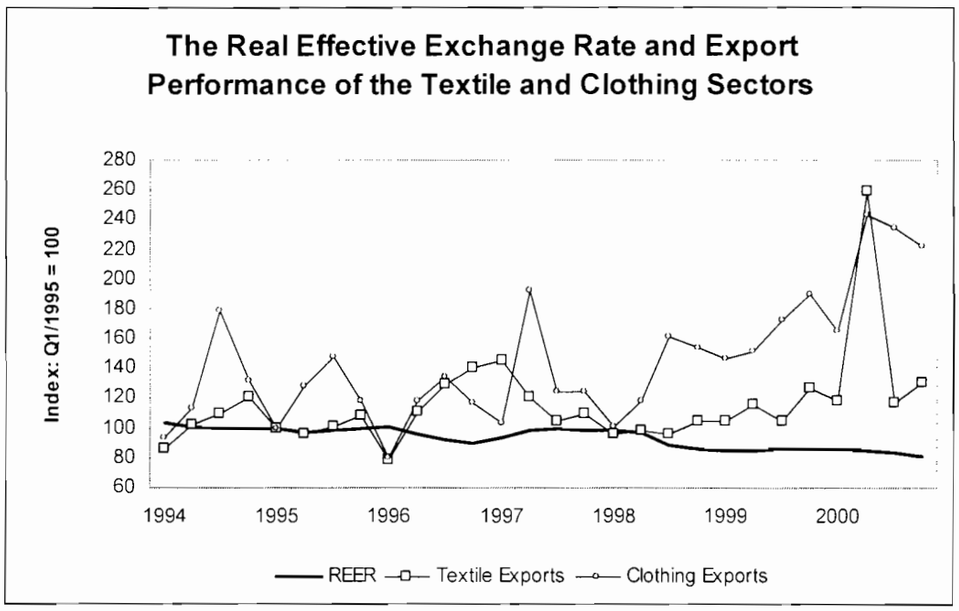

Fig 7.4 **The Real Effective Exchange Rate and Export Performance (SARB, 2001b; DTI, 2001c)**

Indices of the Real Effective Exchange Rate (REER) and the Export Performance of the Clothing and Textile Industries (Q1/1995 = 100)

Variable	1994	1995	1996	1997	1998	1999	2000
REER	103.1	100.0	101.2	93.0	98.0	84.2	86.2
Textile Exports	85.4	100.0	78.9	145.2	96.1	104.9	117.6
Clothing Exports	92.8	100.0	79.5	103.7	101.0	146.1	164.8

Table 7.5 **Indices of the REER and Export Performance (SARB, 2001b; DTI, 2001c)**

Despite the fluctuations in textile exports, in the period 1994 – 1996, textile exports were roughly constant in accordance with a constant REER. The emerging market crisis in 1996 – 1997, which resulted in large capital outflows and a resultant depreciation in the exchange rate, saw a significant rise in exports in the textile sector. However, as the REER appreciated again, textile exports again declined. Post 1998, the REER has declined steadily. At the same time, textile exports (and to a far greater extent clothing exports) have been on a rising trend, showing that the expected relationship between the REER and exports is evident. A statistical analysis of the relationship between the REER and textile exports reveals that for the period under review (1994 – 2000) the (inverse) relationship is not very strong.

A correlation co-efficient of –0.425 is calculated (-1 indicates a perfect *inverse* or negative relationship, +1 indicates a perfect positive relationship). For clothing exports, the inverse relationship is substantially stronger (-0.703), showing that clothing exports appear to be more reactive to changes in the exchange rate. A very sharp rise in textile exports is noted in the second quarter of 2000, although this may reflect poor data or even brief change in classification procedures on the part of the customs authorities.

As a comparison, the clothing industry's exports have performed well, especially since 1998, and appear to be penetrating new and existing markets at an increasing rate. The real growth in exports of the clothing sector significantly exceeds the relative decline in the REER, showing that the increase in exports is not merely as a result of a favourable exchange rate, but instead reflects greater market penetration and / or diversification.

The movements of the REER in relation to textile (and clothing) exports show that exports are clearly sensitive to movements in the REER, with export increases following declines in the REER. However, there are also short-term fluctuations and clearly other influences that impact on the sectors' export performance.

This chapter analyses the trade performance of South Africa's textile industry, and finds that both exports and imports of textile have been increasing significantly in the period under review. Of note is the fact that net imports have been decreasing, which means that South Africa has been able to penetrate export markets at a greater rate than imports have been able to compete with South Africa's output. Reasons for this include the fact that textile manufacturers have increasingly viewed foreign market as an important market for their goods, especially in the light of the lower trade barriers that have allowed the influx of foreign-produced textiles. Exporters have been assisted by the real effective exchange rate, which has made South African-produced textiles more attractive internationally. Real Comparative Advantage (RCA) figures show that the South African textile industry is competitive mainly vis-à-vis its European and North American counterparts, while being at a significant disadvantage relative to many of the Far East countries, notably China, Taiwan and Indonesia. These latter countries have shown to be highly competitive, based on their low labour costs, widespread input-cost subsidisation and achievement of economies of scale. This is so especially at the lower end of the market (i.e. commodity-type textiles), a product segment that South Africa has shown itself to be unable to effectively. This underlines a need for South African textile manufacturers to focus on higher value-added market segments and greater knowledge-intensity in manufacturing, especially with regard to the export markets. The domestic legislative framework and changing trade environment have a bearing on South Africa's success in these efforts, and are analysed in greater detail in the following chapter.

8. The Changing Trade Environment

This section deals with both the domestic (South African) legislative environment, as well as with a number of regional and international trade agreements, as their conditions are binding on member states and industries that are signatories of such agreements. Trade agreements are likely to significantly influence the way that countries and industries interact with each other. For example, they may impact on a variety of typical decisions at company level, including the sales strategy (e.g. focus on exports), investment, changes in levels of operating efficiency (especially in the face of increase international competition) and the like.

A *Free Trade Agreement* (FTA) is essentially an arrangement that establishes "preferential exchange and flow of goods between trading partners across national borders within the free trade area, subject to international and national customs controls" (SARS, date unknown). One of the roles of the roles of the South African Revenue Services (SARS) is the administration of the Rules of Origin as well as customs administration. The Revenue Services therefore play a very important role in the success of any FTA, as they enforce the rules. Regional (essentially SADC) and international (essentially with the EU and the United States) FTAs are dealt with later in this section.

8.1 The Domestic Legislative Framework

The domestic legislative environment analysed in this section encompasses the typical legal framework within which domestic firms operate in, and thus includes specific manufacturing sector legislation, labour and environmental issues. It is, however, imperative to first analyse the position of the South African government, which, through the Department of Trade and Industry (DTI), sets the industrial framework within which all firms operate. During 2000, it published its revised position on a new integrated industrial strategy.

8.1.1 The DTI's Integrated Industrial Strategy

Industrial policy has in the past, to a large degree, been moulded around the political situation in South Africa. Protectionist thinking and an industrial strategy that was geared towards import substitution, tariffs and subsidies, dominated the 1970s and 1980s in particular. It was only in the 1990s, in particular following the new political dispensation in South Africa, that these strategies were abandoned. Whereas in the past the focus was on demand-side measures such as those mentioned above, the post-1994 government sought to liberalise imports and encourage exports by shifting its attention on supply-side measures that were aimed at "reducing costs and improving efficient use of inputs" (DTI, 2001a).

This shift in emphasis coincided and was to a great extent brought about by changes internationally. GATT / WTO regulations have lead to a scaling down of barriers to trade, and a number of FTAs between different regions sought to significantly liberalise international trade. Globalisation has become a fact of life with which South African manufacturers and consumers have to contend with. As a result of globalisation, manufacturers have to increasingly become *inter*nationally competitive to remain in the market. At the same time, they are able to benefit from raw materials that are competitively priced internationally, which in turn positively impacts on manufacturing competitiveness.

The industrial strategy followed by the government, while good in its intentions, did not always have the intended outcome. Liberalisation of international trend increasingly exposed certain sections of South African industry to the harsh realities of globalisation. Many industries have been largely unable to cope with the sudden increase in competition, especially from abroad, and the required improvements in productivity necessary to compete internationally. Often the local industry still relied heavily on South Africa's abundance of raw materials and cheap energy, and as a consequent used these inputs inefficiently.

The DTI has, however, in its latest strategy document released in 2001, re-aligned its proposed industrial strategy. It moves away from focusing on South Africa's traditional reliance on cheap raw materials and access to cheap unskilled labour towards focusing on innovation and knowledge enhancement. While there will be a certain measure of continuity relating to industry support measures (including those aimed specifically at the clothing and textile industries), the major thrust of the new approach will be towards enhancing the ability of especially the knowledge intensive manufacturing sector and new economy services sectors (such as financial services, information technology, tourism etc.) (DTI, 2001a). This requires not only greater innovation and investment in technology, but investment in human capital (skills enhancement). Of particular importance to the DTI's new strategy are its emphasis on forward and backward linkages in the manufacturing sector, especially between the manufacturing sector and upstream and downstream activities, including scientific and academic institutions. The key to sustainable economic growth lies in the way in which the challenges of rapidly changing information technology, innovation and changing consumer demand (towards more sophisticated and more environmentally sound products) are dealt with.

This new industrial strategy will have a direct effect on the South African textile industry, and correctly identifies some of the shortcomings in this sector. It emphasises the need for greater innovation in order to compete both internationally and locally (notwithstanding greater import market penetration by foreign firms). The South African textile industry in particular needs to continue innovating and focusing on quality output, as well as investing resources in its skills base. The new focus of the DTI is thus consistent with the overall needs of the textile industry.

8.1.2 Manufacturing Sector Legislation

Manufacturing sector legislation centres largely around taxation issues, as well as those that are trade-related. Manufacturing sector enterprises are regulated by various pieces of legislation. In the administration and implementation of manufacturing sector legislation, various bodies play an important role.

The regulation and collection of direct and indirect company taxation (i.e. direct company taxes, Value Added Tax (VAT), levies and stamp duties etc.) is facilitated by SARS. It therefore acts as an executive organ of the government, which originally legislates the rules and regulations pertaining to taxation. Also, SARS is responsible for administering any normal or special write-off allowances given to manufacturers for, amongst others, investments in production capacity that generally are of a capital nature. A further function of the revenue services is the task of customs administration through its application and administration of the Rules of Origin.

Further legislation from a local government level is enacted from time to time, and plays an important role in attracting manufacturing sector enterprises into certain areas. Development nodes and cluster initiatives have in the past been established both on a local and regional level, with co-operation between various governing bodies and the government itself. Incentives offered and special regulations usually include lower rates and taxes, favourable equipment and building (tax) write-off allowances and even direct financial support in the form of grants and low-cost finance.

Restrictive trade legislation has, in the past, allowed many South African manufacturing enterprises to be shielded from international competition, and has, as a consequence, eroded much of the competitiveness of the local industry. Both South Africa's tax laws, as well as its tariff structure, are complicated in the world. Thousands of different tariffs, import restrictions and export subsidies evolved due to the numerous (successful) representations made to the tariff board. Most of this has or is changing, though, and manufacturing legislation with regard to international trade has become far more streamlined. Being a signatory to various (free) trade agreements, including GATT/WTO, SADC FTA, EU FTA, AGOA etc., South Africa has had to significantly scale down or remove almost all duties on imports, as well as terminate many direct export assistance schemes. Most tariffs were agreed to be scaled down over a period of 7 years, starting with the signing of the GATT in 1995.

While this has made large chunks of manufacturing sector legislation far more accessible and transparent, it has also opened domestic markets to the international forces of supply and demand, and production efficiency. The benefit, to those enterprises able to adapt and innovate, is a far greater access to international markets. This, in many cases, also means access to input materials (mainly commodities) at world prices.

At the time of writing, the ongoing disagreement around the final implementation (and some of its terms) of various regional and international trade agreements is detrimental to the South Africa's manufacturing sector. This is mainly due to the fact that the important issues surrounding international trade are clouded by continuous uncertainty and indecisiveness, and are consequently impacting on investment and production decision making, both short and long term.

8.2 Regional Agreements Affecting the Textile Industry

8.2.1 Regional Agreements: SADC, SACU, Comesa, CMA, Lome and SAPs

The Southern African Development Community (SADC) consists of South Africa, Namibia, Swaziland, Angola, Botswana, Lesotho, Mauritius, Malawi, Mozambique, the Seychelles, Tanzania, the Democratic Republic of Congo, Zimbabwe and Zambia. The ultimate objective of the SADC is to enable it to "effectively address the developmental needs of the region and to position the region to meet the challenges of the dynamic, ever changing and complex globalisation process as well as to take advantage of the opportunities offered by globalisation" (SADC, 2001).

The SADC, which forms the center-piece of South Africa's regional foreign economic policy, has been chosen by the South African government as the platform to effect regional trade integration. What complicates the situation is the prevalence of numerous bilateral and trilateral trade agreements, not only amongst member states, but also with non-member African and rest-of-world states.

Trade between South Africa and SADC member countries increased significantly in the 10-year period 1988 to 1998, with imports attaining R2.2 Billion (1988: R531 Million) and exports reaching R15.6 Billion (1988: 2 Billion). In percentage terms, these values indicate that 11% of South Africa's exports go to the SADC, while only 1.5% of imports are sourced from SADC countries. The trade account is thus heavily weighted in South Africa's favour. Zimbabwe is the most important market for South African output, followed by Mozambique, Zambia, Mauritius, Malawi, Angola and Tanzania. In terms of imports, the most important SADC trading partners are Zimbabwe, Malawi, Angola, Zambia and Mozambique (GCIS, 2000).

Recent regional and international free trade agreements are likely to have a strong impact on the interaction between South Africa and other member countries in the relevant free trade areas. The SADC FTA was (at least partially) implemented on 01 October 2000, with the objective of being completely integrated by 2008 (SADC, 2001). Implications of this trade protocol include the following: (Page, 1997):

- To liberalise intra-regional trade in goods and services in an equitable manner, as well as to establish a free trade area within the region;
- To foster greater production efficiency as well as to improve the investment climate within the region;
- To enhance industrial activities and regional economic development

However, the SADC FTA is sometimes argued to be of no major benefit to South African producers. It is said that as South Africa already dominates trade in the region, the prospect for significant increases in exports to SADC member states is relatively small. In the case of Zimbabwe, for example, South Africa is the source of 40 % of that country's imports (Hawkins, 2000). As South African manufacturers are unlikely to face stiff competition within the SADC region, the greater challenges being logistics and political instability. A more pressing concern is the possibility of being out-competed within South Africa by imports from beyond the region, but channelled illegally through SADC member states with insufficient customs controls (Hawkins, 2000). Even where South African customs ports of entry are improved significantly, it is always the weakest link in the chain that will present problems for a host country. In this case, weak customs controls in a less developed SADC country may allow access to regional markets of 'dumped' and often 'illegal' imports, which in turn are very likely to filter through to the largest economy in the region, being South African market. It would often be difficult to prevent such goods movements, unless it can be ascertained with a degree of certainty that these goods have entered the SADC region in contravention of the principles of 'free trade' (i.e. dumping, where the foreign industry may be heavily state subsidised and thus able to sell at below cost to gain market share). Exporters from the Far East, which have a strong competitive advantage over South African textile manufacturers (especially at the bottom end of the market), are likely to further exploit any trade loopholes that may exist. It is unlikely that the South African customs authorities will be unable to deal adequately with this problem, and it is envisaged that the implementation of the SADC FTA will increase the pressure on the South African textile and clothing industries.

The SADC FTA was, according to the Textile Federation (2000b), concluded without prior consultation with the industry. As a consequence, it argues, the FTA is disadvantageous. It says that the major problem is that there exist too many inconsistencies between member states' external tariffs and quotas. The inconsistencies of the external member-country's tariff structures, and the non-reciprocal nature of the SADC agreement, have previously been identified as some of the major challenges faced by the South African textile industry.

The agreement may, however, mean that a greater share of the South African textile industry's input materials (e.g. cotton) is sourced from within the region, while also resulting in a lower demand from South African clothing manufacturers (who in turn may also source textiles in other SADC states).

FTAs usually lead to a shift in manufacturing patterns– while increased competitive pressures may appear in terms of output, manufacturers are also able to take advantage of more competitively prices input materials.

A number further agreements and trading arrangements exist to which various SADC member states belong. These are the South African Customs Union (SACU), the Common Monetary Area (CMA), Common Market of East and Southern Africa (COMESA), Structural Adjustment Programs (SAPs) and the Lomc Convention (DTI, 1998a) (see Table 8.1). The Lome Convention holds various benefits for South Africa and the region as a whole, namely (a) reduced tariffs on many of South Africa's current exports, (b) increased facilitation of intra-regional trade, since all sub-Saharan Africa states are also members, and (c) the easing of diplomatic relations amongst South Africa and its SACU and SADC partners (Stevens, 1997). It should be noted that while South Africa is a signatory to the Lome convention, it is not bound by its trade and aid provisions. This is said to impact negatively on other countries within the SACU that trade with the EU, as the agreement excludes goods made with inputs from South Africa (DTI, 1998a). Negotiations for a Post-Lome arrangement were concluded in early 2000, and it was agreed that current market access arrangements would remain in force until January 2008. From a South African perspective, a highly important element of South Africa's membership of the Lome Convention is the fact that South African contractors in general are now allowed to tender for European Development Fund (EDF) contracts, which are estimated at being worth about R15 Billion a year (GCIS, 2000).

Naturally, trade patterns are in influenced in a significant way by agreements and membership of common trade conventions. For example, the SACU members have a common external trade tariff, which is consistent with the objective of economic integration and mutual benefit. One of the major shortcomings of this agreement is the non-membership of Malawi, which is a major problem for especially South Africa. This situation is exploited by mainly Far-East countries, and used as a platform to gain access to the South African market through (often) illegal imports.

REGIONAL ORGANISATIONS AND TRADE ARRANGEMENTS						
COUNTRY	**SACU**	**CMA**	**SADC**	**COMESA**	**LOME**	**SAPs**
Angola			X	X		
Botswana	X		X			
Lesotho	X	X	X	X	X	X
Malawi			X	X	X	X
Mauritius			X	X	X	X
Mozambique			X	X	X	X
Namibia	X	X	X	X	X	
South Africa	X	X	X		X (Note [3])	
Swaziland	X	X	X	X	X	
Tanzania			X	X	X	X
Zambia			X	X	X	X
Zimbabwe			X	X	X	X

Table 8.1 Regional Organisations and Trade Arrangements (DTI, 1998a)

8.3 International Treaties and Agreements Affecting the Textile Industry

The number of international agreements affecting the textile industry has increased significantly over the past few years, especially since South Africa opened up its economy to the world after the political events and new dispensation of the 1990's. This has been consistent with international developments, whereby globalisation of trade has been occurring on an increasing scale, and a large number of countries have committed themselves to the downscaling of trade barriers. No longer are South African companies competing alone for domestic market share; they have now been joined by a increasing number of foreign products (imports) vying for domestic market share. At the same time, previously closed markets are presenting new opportunities to South African exporters. These increases in international trade have been both cause, and effect, of a number of important international trade agreements affecting all economic activity, including that of the textile industry, in South Africa. As conventional tariff barriers come down the importance of non-tariff (NTB) or technical trade barriers (TTB) and (in this industry in particular) environmental issues will become much more important barriers to trade. For the South African textile industry to understand these far-reaching implications, challenges and opportunities of these agreements will be the difference between long-term survival or rapid decline.

[3] Although South Africa is a member state of the Lome convention, it is not bound by its trade and aid provisions

8.3.1 The Africa Growth and Opportunities Act (AGOA)

One of the greatest opportunities that has opened up for the South African textile industry (amongst others) in recent years is the 'Africa Growth and Opportunity Act' (AGOA). The AGOA builds on existing U.S. trade programs, and expands the benefits previously available under the Generalised System of Preferences (GSP) program. One particularly difficult and long-standing area relating to market access is the textiles sector, where some estimates suggest that roughly 70 percent of current US trade protectionism measures are directed towards this sector. (Vaughan 1995).

The total number of items qualifying for duty-free access to U.S. markets presently stands at +/- 6100, including approximately 1800 products added under the AGOA (including footwear, wine, car components etc.). Under the AGOA these products now qualify for duty and quota free access until 2008, while under the GSP they would have only qualified until September 2001 (and subject to re-negotiation). While the eligibility criteria for the GSP and AGOA substantially overlap, GSP eligibility does not imply *AGOA* eligibility (Naumann, 2001).

The *African Growth and Opportunity Act* (AGOA) was signed into law by former U.S. president Bill Clinton on 18 May 2000, and covers the 8 year period from 01 October 2000 to 30 September 2008. The AGOA forms part of the *Trade and Development Act of 2000*, which also includes a separate Act with similar provisions for the Caribbean, namely the U.S.-Caribbean Basin Trade and Partnership Act (CBTPA). In the words of the Act, its intention is to "authorise a new trade and investment policy for sub-Saharan Africa, expand trade benefits to the countries in the Caribbean Basin, renew the generalised system of preferences, and re-authorise the trade adjustment assistance programs" (AGOA, 2000). The original Bill was passed by the US senate in the first half of 2000, but not after a fair amount of compromises had to be reached regarding some of the Bill's provisions. Most of the objections to the bill emanated from the US textile and apparel industries (Textile Federation, 1999b). The end-result of the negotiations is an Act that holds potentially vast benefits for African manufacturers, and while it sets very stringent and thorough qualifying conditions, it does seem that the direct benefits to the South African clothing industry, and thus indirectly the local textile sector, are likely to be significant. But this will depend on the industry's response to a number of NTBs.

The Act is aimed at fulfilling a developmental role by strengthening US relations with those "regions in the world that are making significant strides in terms of economic development and political reform" (CSIR, 2000). The Act itself states that "it is in the mutual interest of the United States and the countries of sub-Saharan Africa to promote stable and sustainable economic growth and development in sub-Saharan Africa..." (AGOA, 2000). The AGOA is essentially a 2-part Act that on the one hand relates to the non-textile / garment sectors and on the other to textiles and garments (clothing). A special set of conditions applies to the textile and garment sectors.

The AGOA provides for qualifying sub-Saharan countries to obtain duty-free and quota-free access to US markets, and in South Africa's case, it seems likely that the textile and clothing industries will be among the industries to benefit the most from the Act. On October 02, 2000, the U.S. issued a proclamation designating 34 SSA countries as eligible under the provisions of the AGOA (Swaziland was subsequently included on January 18, 2001). Notably, Zimbabwe was not included in the list of designated countries, presumably due to the current political problems and reported human rights abuses. Of the 34 qualifying countries, 29 countries are designated as being *Lesser Developed Beneficiary Countries* (i.e. those with a per capita GNP of under $1,500 in 1998). They thus qualify for an additional preference of duty free and quota free market access for *apparel* made from fabric originating anywhere in the world . This special provision has as its expiry date the 30 September 2004. Fig. 8.1 shows those SSA countries (dark shade) that are eligible for qualification in terms of the Act. The countries with a light shade are part of SSA, but (as yet) do not qualify under the AGOA. The non-shaded countries are excluded, as they do not form part of sub-Saharan Africa.

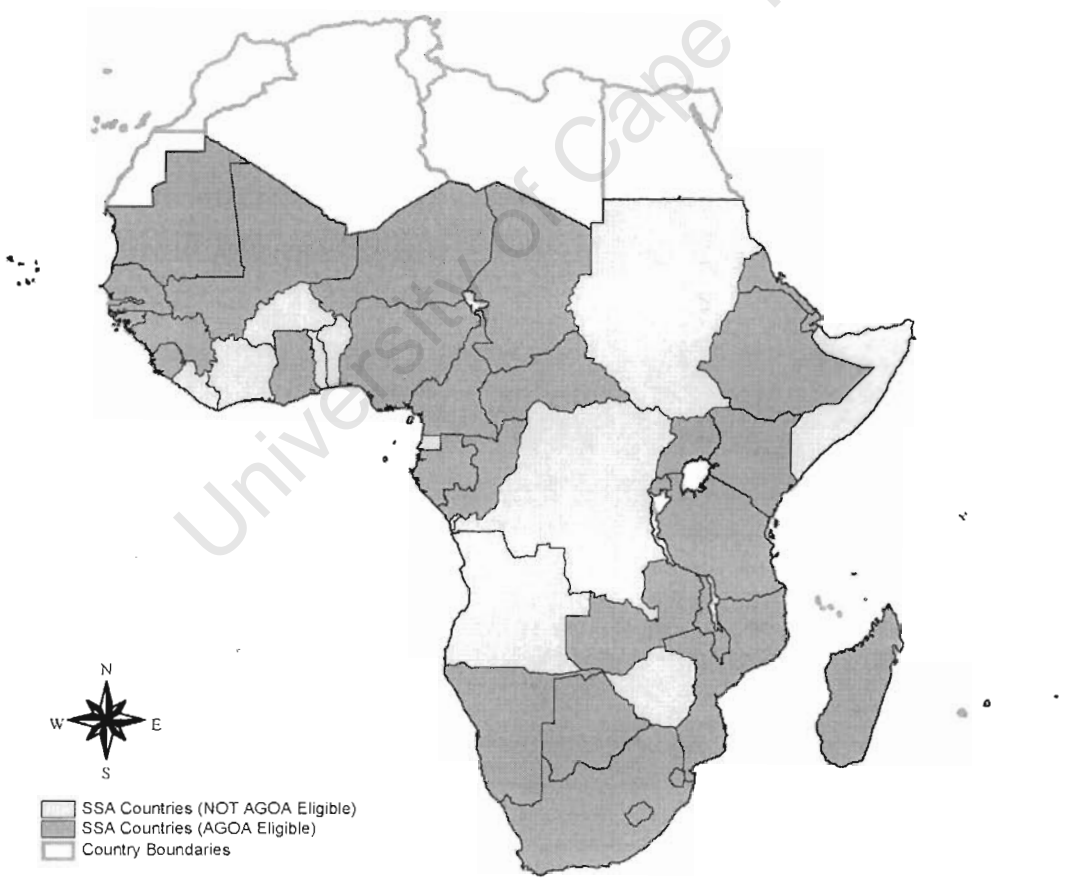

Fig. 8.1 Map of AGOA-Eligible and Non-Eligible Sub-Saharan African Countries (AGOA, 2001; own projection)

With the exception of Botswana, Gabon, Mauritius, Namibia, the Seychelles and South Africa, all SSA countries fall into the *Lesser Developed Beneficiary Country* category. However, they still need to meet the general AGOA eligibility requirements in order to qualify for the benefits (i.e. free market access to the U.S.) under the Act. Not being classified as *Lesser Developed Countries*, South Africa and traditional trade partners such as neighbouring Botswana and Namibia, as well as Mauritius, were singled out as amongst the countries that were banned from using fabrics other than those manufactured in Africa or USA. This may turn out to be the greatest short to medium term benefit to the South African textile industry, as the AGOA will lead to significant "new" demand for locally produced fabrics. However, it seems unclear how the provisions of this Act will harmonise with SADC trade agreements, which envisage duty-free trade amongst its member states. The case involving Malawi (South Africa imports significant quantities of clothing and textiles from Malawi, much of which may have originated in the Far East) could be particularly interesting, as it appears that a loophole may exist whereby South African clothing manufacturers, using foreign-sourced fabrics, may simply export their wares to the US *via* Malawi or similar (in terms of 'rules or origin') countries. It would seem that only a strict enforcement of the 'visa' system as stipulated by the Act would prevent many of the potential discrepancies and loopholes forming.

	Key Features of the AGOA
1	Whereas in the past any developmental legislation was usually geared towards debt restructuring or relief, the provisions of this Act are significantly different in that its stated aims are to stimulate economic *development* and thereby increases in manufacturing ability and capacity as well as employment levels
2	Through the elimination of tariffs on most African textile and apparel exports to the US (until now *ad valorem* tariffs were often 15 – 20%), new opportunities through greater market access are provided to many of the poorest nations in the world. New investments in manufacturing capacity will have a positive effect on economic development
3	US market access without limit for some textiles and clothing; others limited to fixed percentage of total US clothing and textile imports
4	Duty-free and unlimited (subject to reasonable safeguards) access for textile and clothing products made from yarns / fibres not available in the US, or clothing made from fabric / yarns sourced from the US
5	African textiles and clothing made from qualifying (regional) fabrics / yarn will be subject to an initial cap of 1.5% of total US textile and clothing imports; - this cap will be increased in equal increments annually up to a maximum of 3.5% in year 8 (i.e. 2008)
6	Special provision is made for the least developed of the SSA countries where per capita GNP is less than US $ 1500 per annum; these countries may use imported fabrics "*regardless* of the country of origin of the fabric used to make such articles" for a period of 4 years (i.e. until 2004).

Table 8.2 Key Features of the Africa Growth and Opportunity Act (CSIR, 2000; AGOA, 2001)

	Key Criteria for Eligibility under the AGOA
1	Economic and socio-political criteria: A country needs to have established, or making continual progress towards establishing, a market-based economy, the rule of law, the elimination of barriers to US trade and investment, a system to combat corruption and bribery, economic policies that promote economic development etc.
2	Each country has to have in place an effective "visa" system, domestic laws and to prevent unlawful transshipment of the articles and the use of counterfeit documents
3	The US Customs Department must at all times be allowed the necessary access to investigate allegations of transshipment of goods through such country
4	At the request of US Customs to report timeously on total exports from and imports into that country
5	Producers and exporters of covered articles must maintain complete and accurate records of production and exports for at least 2 years (from date of manufacture and / or export)
6	Countries have to upon request provide all documentation establishing the country of origin of covered articles as used by that country in implementing an effective visa system

Table 8.3 Key Criteria for Eligibility under the Africa Growth and Opportunity Act (AGOA, 2000)

While the local clothing industry is likely to benefit more than the textile industry, any benefits to the clothing industry are indirectly also beneficial to local manufacturers of textiles. According to the South African Clothing Federation (Clofed), predictions are that the Act will lead not only to major textile sector investment, but will also create between 130,000 and 150,000 jobs by 2003 (Theron, 2000). The AGOA would have a "pipeline effect" that should significantly increase employment prospects within related industry sectors. South Africa's market penetration in the US was estimated by the same source to be in the region of 0.1%, and unlikely to grow even to 0.5% in the short term. The Act, however, essentially provides for sustained annual growth of almost 20 % per annum in duty-free exports of African textile and clothing products to the US, considering the rising import cap of 1.5 – 3.5 %.

8.3.2 Requirements to benefit from the AGOA and the 'Rules of Origin'

As mentioned previously, the AGOA is essentially a 2-part Act that on the one hand relates to the non-textile / garment sectors and on the other to textiles and garments (clothing). A special set of conditions applies to the textile and garment sectors, placing additional conditions on exports from these sectors wanting to qualify for the benefits offered under the AGOA.

For SSA countries to be able to take advantage of the opportunities offered by the AGOA, a number of criteria need to be fulfilled. These terms and conditions have been introduced by the US to prevent exploitation of the benefits accompanying the Act. In particular, it is suggested, the US is keen to prevent SSA from simply becoming a 'go-between' gateway for Far Eastern countries for gaining access to

'restricted' US markets (transshipment). In many cases, due to a long history of 'dumping' and predatory market practices, certain aspects of trade between some Far Eastern countries and the US have become restricted. In most instances, quotas have been put in place, limiting such countries from excessively exporting to the US. The AGOA seeks to promote economic development in SSA, as well as opening up African markets to US imports and creating new sources of supply form a "region richly endowed with both natural and human resources" (AGOA, 2000). Whether these are the 'only' reasons is not clear. One could speculate that the US is seeking a restriction-free market for its products (bearing in mind that the US has a trade deficit that has been growing to unsustainable levels), while SSA exporters struggle to meet the eligibility requirements for greater US market access. In addition, lack of competitiveness could make market penetration in the US very difficult.

The most fundamental requirements that have to be met before a beneficiary country can export to the U.S. under the provisions of the AGOA, can be found in the '**Rules of Origin'**. This provision states that a product must be the "growth, product or manufacture" of a (eligible) beneficiary SSA country. Also, documentation regarding the country of origin of the covered articles must be kept, including documentation such as production records, information relating to the place of production, the number and identification of the types of machinery used in production, the number of workers employed in production, and certification from both the manufacturer and the exporter.

The principal aim behind the rules of origin is adherence to the aims of the AGOA and the prevention of transshipment. Transshipment occurs where the provisions of the AGOA and country eligibility status are abused and non-eligible countries' goods pass through SSA countries without any significant value being added, merely to obtain the benefits under the AGOA. Severe penalties are imposed where transshipment is identified, including a 5-year ban from all AGOA benefits for the exporter, his successor and any other entity owned by the exporter. The eligibility status of an industry or country as a whole may also be threatened.

8.3.3 Textile/Garment sectors: Quotas, Rules of Origin and the Visa System

For the textile and clothing (AGOA speaks of 'garments') sectors, the rules are significantly more stringent than for all other sectors. The average duty applicable to garment imports into the U.S. presently stands at 17.5%, but falls away where AGOA criteria are met. The most fundamental differences lie in the fact that for the textile / garment sectors, the following **general** conditions apply:

- Exporting countries have to establish an effective '**Visa System'** and have in place strong enforcement mechanisms and verification procedures, to ensure compliance with the **Rules of Origin**;

- **Quotas** are in place to ensure that for certain garments a quantitative (as opposed to value-based) ceiling is not exceeded by beneficiary countries as a whole. This cap is measured in square metre equivalents (SME's).

Textiles may **not** be exported directly to the U.S. and qualify for AGOA benefits, but will incur normal duties and quotas. However, **clothing (garments)** may be exported duty- **and** quota free subject to the following:

- Garments are wholly assembled in SSA from fabrics (cut and formed) in the U.S. and yarns (formed) in the U.S.;
- Wholly assembled in one or more SSA Lesser Developed Countries (as previously defined) regardless of country of origin;
- Sweaters produced from Cashmere or Merino wool;
- Garments produced from yarns and fabrics not available in commercial quantities in the U.S.

Garments assembled from regional and other fabrics may be exported duty- and quota free to the U.S. under AGOA subject to the following limitation:

- A quota system limits the annual Square Metre Equivalents (SME's) exported to the U.S.. This percentage cap is calculated as 1.5% of total U.S. imports in this category, rising in equal annual increments to 3.5% in year 8 (starting October 01, 2000). The quotas effectively allow for a doubling of SSA apparel exports to the U.S. before even the (year 1) cap is reached.

Table 8.4 AGOA Quotas and the Rules of Origin (AGOA, 2001)

The **visa system** (**"Special Rules"**) is the procedural formalisation of the Rules of Origin and refers specifically to the textile / garment industries and is a pre-requisite for exports to the U.S. in this category. The system is thus effectively a comprehensive tracking system whereby close records have to be kept for all textiles utilised and garments produced by a manufacturer in an *eligible* SSA country. As of early October 2001, a total of 9 countries had qualified for the "visa system", namely Botswana, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, South Africa and Swaziland (see following map).

An important concession that South African *textile* manufacturers were working towards involved the 'rules of origin' clause. The clause exposed differences in opinion amongst South African clothing and textile bodies: textile manufacturers (represented by Texfed) insisting on "only local, meaning domestic and African" materials, while clothing manufacturers (represented by Clofed) were hoping to be able to use Asian fabrics too. The textile industry clearly feared a repeat of the "Malawi problem" referred to earlier, whereby manufacturers from the Far East (who have often exhausted their US market-entry quotas) had set up manufacturing plants that only added an insignificant proportion of value to the finished product in the host country. By the time the AGOA was enacted, textiles per se did not qualify for direct duty-free treatment. The largest benefit to the industry is in the form of increased demand from clothing manufacturers, especially South African manufacturers, who are barred from using third country input materials (i.e. textiles) in the manufacture of "qualifying" garments. The latter provision relates to the fact that South Africa, along with a small number of other regional countries, is not seen as a "lesser developed country", thus barring it from the short-term benefits (i.e. until September 2004) associated with being able to utilise third-country inputs.

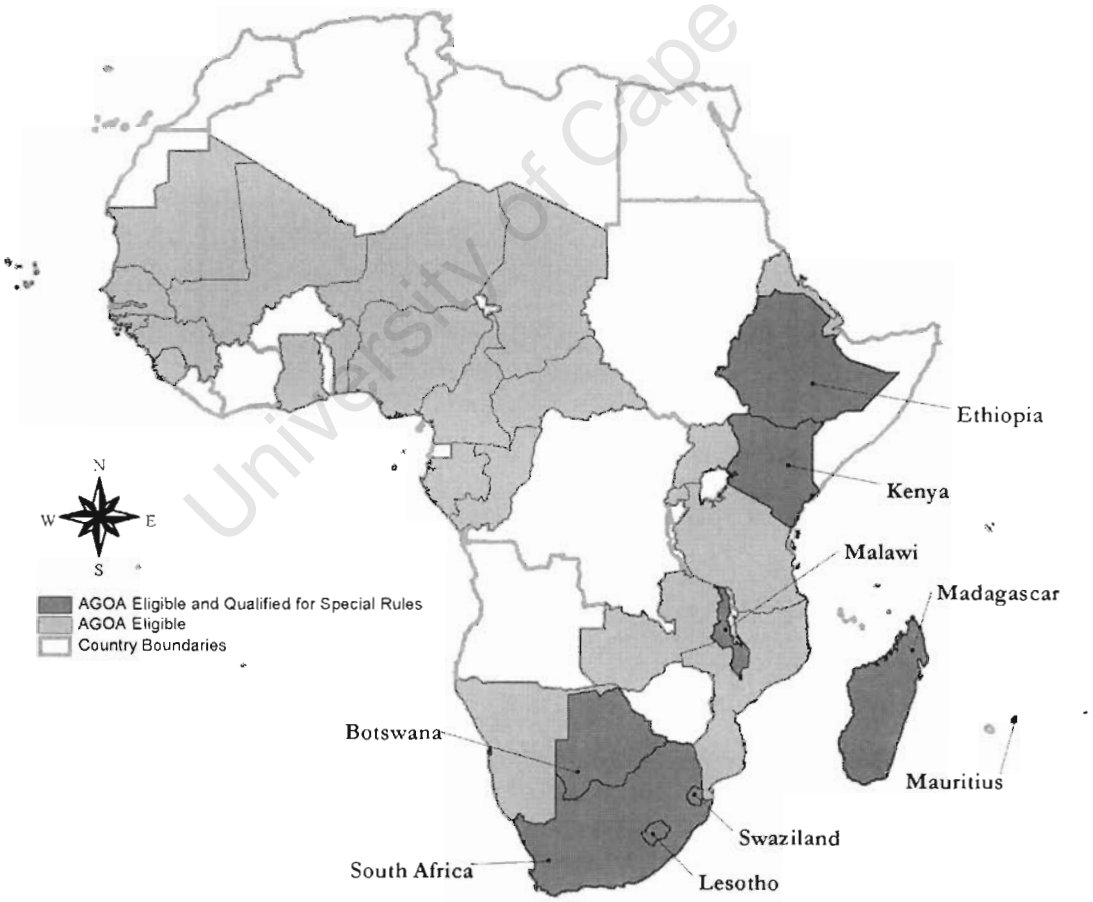

Fig. 8.2 **Map of AGOA-eligible Countries highlighting qualification under "Special Rules" / Visa System (as of early October, 2001) (AGOA, 2001; own projection)**

8.3.4 Concerns Regarding the Terms of the AGOA

The AGOA offers potentially significant benefits to eligible Sub-Saharan African countries, as well as to the U.S., although its complex set of provisions raises some important concerns. These relate mainly to the fact that the Act's reciprocal nature, initially not obvious, masks the potential costs and liabilities that compliance with the Act may bring along. A number of general provisions of the carefully worded Act that may pose challenges to the eligible SSA countries include (Naumann, 2001):

- The **non-negotiability** of the AGOA, it being 'imposed' or 'offered for acceptance' rather than being a negotiated agreement, has resulted in several contentious, restrictive or essentially one-sided provisions;

- The drawn-out and stringent **requirements** for country **eligibility**, and especially compliance with the visa system, make compliance with the conditions attached to the AGOA challenging and bureaucratic;

- Concerns that the underlying intention of the Act is to secure greater **access** to Sub-Saharan Africa's (SSA) natural wealth (*low value added* e.g. minerals, oil), while providing new markets for U.S. manufacturers (*higher value added*) in SSA;

- While the AGOA's term of application commenced on October 01, 2000, fulfilment of the eligibility requirements can take months or years. At the same time, the Act makes provision for essentially unrestricted (and **immediate**) **access** to SSA markets and thereby potential exploitation or harm to sensitive or infant industries (however, it would appear that the clothing and textile industries may be two of the industries most likely to *benefit*);

- In the case of the apparel / textile provisions, the **quota** limits for SSA-sourced fabric and yarn input materials being based on Square Metre Equivalents (SME) as opposed to value may counter efforts by SSA garment manufacturers to move up the value chain. There is also a danger of the quotas being 'monopolised' by those eligible countries that already have a relatively strong garment manufacturing base.

- While the potential **benefits** offered to SSA countries are significant, similar benefits have been offered as part of the Trade and Development Act to Caribbean countries under the U.S.-Caribbean Basin Trade and Partnership Act (CBTPA). The proximity of these countries (especially in terms of logistics and consequently response times) to the U.S. market may have a negative impact on possibilities for penetration of U.S. markets by SSA.

- The right of the U.S. to **unilaterally cancel the eligibility** of SSA countries or individual SSA producers to AGOA benefits with no recourse to *independent* dispute settlement.

To some SSA industries, the market access opportunities offered by AGOA may provide the required stimulant that could allow longer-term survival and growth. The Act is likely to lead to significant increases in two-way trade between the U.S. and Sub-Saharan Africa, although this also means an increase in potential competition from abroad. The South African clothing and textile pipeline is, relative to most other eligible countries, likely to obtain the greatest benefits as a result of the AGOA, owing largely to its relative size and strength within Africa, as well as greater availability of manufacturing capacity in the short to medium term.

Amendments to the AGOA are presently being considered by the U.S. legislature, which may lead to a so-called AGOA II. For example, the US congress is looking at removing the limits of clothing that SSA countries can export to the US, if they are manufactured in Africa (Barber, 2001). This in turn would benefit the textile industry. According to the Textile Federation (2001b), there are a number of aspects that will be important for South Africa, as well as many other SSA countries. These include the extension of the AGOA beyond its 2008 cut-off date, the non-extension to more developed SSA countries of the third country fabric concession, and the inclusion of yarns, fabrics and household textiles as qualifying for duty-free access to the U.S. A significant concern, of course, is that AGOA ends in 2008, and what may happen if the provisions of AGOA are not extended. The key will be to make use of this 'window period' to gain a foothold in the US market –as once gained, it is much easier to maintain it. Exporters may have to incur significant initial start-up costs, especially relating to the U.S. market.

These include information costs (i.e. market research), the upgrading of packaging and perhaps product quality, and building marketing channels. Where such costs are important considerations for exporters, sunk costs "hysteresis" may occur. This means that once exporters have overcome the initial export barriers, momentum is likely to be established and (a greater number of) firms may continue exporting even if the favourable trade policies (i.e. the drivers) are diminished (for example the duty-free market access). In other words, those manufacturers who are able to penetrate new markets tend to continue to operate in these markets (Kaplan, 2001). As long as an exporter's operating costs are covered, he will remain in the market. From a policy perspective, the key is to get firms to *'start'* exporting and provide an environment that is conducive for export growth. Furthermore, if getting into exports is a greater challenge than the expansion of export sales, government may shift its focus from export subsidies (which are often perceived to be of a temporary nature) to providing market intelligence and improved export infrastructure (Roberts and Tybout, 1995). In this way, uncertainty is replaced by policy stability and consistency.

8.3.5 GATT

The General Agreement on Trade and Tariffs (GATT) formally came to an end with the implementation of the Marrakesh protocol early in 1995, and was replaced by the World Trade Organisation (WTO). This trade agreement meant that countries who were signatories to the agreement, which included South Africa, formally committed themselves to a specific phase-down of import duties, subsidies and other trade barriers.

Shortly after South Africa became signatory to GATT in 1994, it agreed to an accelerated phase-down of import tariffs over a 7-year period (the agreement required a maximum of 12 years). This not only posed a greater challenge to the textile industry than originally anticipated, but also showed the Government's commitment to forcing the South African textile industry to become more efficient and competitive as soon as possible. The agreement has as a consequence that South Africa is opening up its market to foreign competition faster than what would have been necessary, placing significant pressure on the domestic industry to adapt. The reverse side is that local consumers and firms can take advantage of cheaper imports and raw materials (e.g. fibre and yarns), which will have some positive effects on the industry as a whole. A positive spin-off is that this increase in competition pressurises an industry (and country as a whole) to re-allocate its resources away from *in*efficient production to more efficient utilisation of its resources (i.e. more efficient production methods and distribution channels).

Textile Industry Tariff Phase-Down Schedule (1995 - 2002)								
Description	**pre-phasedown 1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
AD VALOREM								
Synthetic Fibre, e.g. Polyester	23	21	19	17	15	13	11	7.5
Spun Yarn	30	28	26	24	22	20	18	15
Filament Yarn				15	15	15	15	15
Fabric	42	39	36	33	30	27	24	22
Household Textiles	52	49	46	43	40	37	34	30
Clothing	84	78	72	66	60	54	47	40
SPECIFIC DUTIES c/kg MINIMUM								
Spun Yarn / Woven Fabric				0.557				
Knitted Fabrics				0.656				
Domestic Textiles / Clothing				0.590				
Maximum				1.0	1.0	1.0	1.0	

Table 8.5 Textile Industry Tariff Phase-Down Schedule (Texfed, 1999b; House, 2000)

8.3.6 The European Union Free Trade Agreement (EU FTA)

During March 1999, the South Africa / EU Free Trade Agreement was first ratified by both the European and South African parliament (although numerous 'hitches' have delayed its final implementation to, it is hoped, the second half of 2000). The agreement is good news for the textiles industry in that it significantly increases trade opportunities between South Africa and the European Union, as well as providing better access to international technology and know-how. At the same time as opening European markets to South African manufacturers, the agreement will further expose local producers to the pressures of heightened foreign competition.

According to the South African Revenue Services (SARS, date unknown), the main objectives of the SA / EU agreement, especially from a South African viewpoint, are as follows:

	The Main Objectives of the SA / EU Free Trade Agreement from a South African Viewpoint
1.	The consolidation of strategic links with South Africa's main trading partners in Europe with a view to the provision of sustainable economic growth;
2.	South Africa increasing its international competitiveness; and expansions in those sectors where it is competitive;
3.	The continuing development of local and regional industrial capacity;
4.	The facilitation of industrial restructuring; and
5.	Increasing investment flows into South African and regional economies.

Table 8.6 Objectives of the SA / EU Free Trade Agreement from a South African Viewpoint (SARS, date unknown)

Some criticism has been levelled at the agreement by local manufacturers and labour organisations, who are of the opinion that the benefits are not entirely reciprocal, favouring Europe. This criticism appears to be largely based on the fact that the EU is scaling down tariffs off a much lower base percentage, while continuing to extract last-minute concessions from South Africa.

The FTA with the EU initially held much promise for mutually beneficial trade between South Africa and the EU, although delays with its implementation have lead to uncertainty within South African industry. The agreement, in terms of which duties on most trade articles would be reduced or scrapped entirely, is likely to lead to increased trade between the EU and South Africa. At present, taking into account the top 25 international trading partners of the South African textile industry, the South African textile industry has a significant trade surplus with European countries (see also Section 7.3 on Revealed Comparative Advantage and Appendix 06) (DTI, 2000). By way of comparison, there was also a significant trade

surplus between the US and South Africa, although total trade between South Africa and the EU exceeded that between South Africa and the US almost three-fold.

South Africa has a trade surplus with the UK (which was the South African textile industry's 3rd largest overall trading partner during 1999), as well as Italy and France, while a trade deficit was incurred with (in descending order) Germany, the Netherlands, Belgium, Spain and Portugal. The overall trade figure reveals that at present South Africa appears to have a comparative advantage over the EU in the manufacture of textiles (see Revealed Comparative Advantage analysis in Section 7.3). The impact on the South African textile industry in response to the SA-EU FTA remains to be seen, although it is clear that the EU would be scaling down tariffs on clothing and textiles off a much lower base that South Africa. In theory this means that some of the trade surplus between countries may be reduced, especially considering the likelihood of non-tariff trade barriers such as environmental demands, required lead times and quality issues.

According to one source, the local textile industry could double its size (in terms of output) if the European Union (and US) would open their markets to South Africa, without the present (very high) restrictions (DTI, 1998a). The validity of this statement, which ties in with statements made about the clothing and textile industries by the SA Clothing Federation (Theron, 2000), should soon become evident as trade especially between South Africa and the US increases in response to the US African Growth Act.

Parallel to developments as a result of the SA / EU FTA, the European Union is continuing to liberalise access to its markets. The EU has recently adopted measures to liberalise the imports of 65 categories of textile and clothing products from other members of the World Trade Organisation (WTO, formerly known as GATT) (Textile Federation, 2001b). This adopted EU regulation implies that 37 bilateral product quotas vis-à-vis WTO members, and possibly another 28 when taking into account China and Taiwan's likely accession to WTO member status, are eliminated. The EU Commission, the EU's executive body, is also presently engaged in talks with third countries aimed at "reciprocal market opening of textiles and clothing trade" (Textile Federation, 2001b).

One of the underlying hypotheses of this report is that while tariff-based trade barriers, especially in the textile and clothing industries, are being reduced world-wide in line with GATT / WTO recommendations and bi-lateral trade agreements, they are being replaced with non-tariff and mainly technical trade barriers. These are often specific environmental demands, and frequently take on the form of demanding compliance with well-known eco-labels and other formal certification. While, *prima facie*, the downscaling of tariff barriers and quotas between South Africa and the EU opens up new opportunities for textile manufacturers, on a practical levels the flow of benefits may be largely one-way. The EU region, where the market for eco-labelling has progressed significantly and environmental awareness is great, may thus become an increasingly difficult market to penetrate, notwithstanding current trade volumes.

The South African textile industry generally does not comply with any eco-labelling schemes or similar certification (except for a very small number of progressive manufacturers), and it is highly likely that this will become a significant competitive disadvantage in future. Eco-labelling, dealt with in Section 12 and 13, is not restricted by WTO regulations provided that certain transparency issues are met. Unless South African manufacturers can accede to the non-tariff barriers that (will) restrict EU market access (mainly through certified compliance with minimum environmental standards), trade agreements such as the EU trade pact will be of limited benefit. If anything, they will further expose the domestic textile industry to competition from "lean and mean" E.U. manufacturers.

8.3.7 The Mercosur Treaty

While South Africa is not a member of the Mercosur treaty, this trade agreement nonetheless holds potential advantages and disadvantages for the country. While agreements that lower the barriers of trade in most instances lead to overall economic and welfare gains for the countries involved, losses may be incurred by certain sub-sectors of the economy for a number of reasons.

The Mercosur treaty is the result of the formation of a trade bloc in South America between various of its countries. The member countries consist of Argentina, Brazil, Uruguay and Paraguay, and the treaty was formally implemented in December 1994 with the signing of the Protocol of *Ouro Preto*. This was after an earlier treaty was signed by all four countries in 1991 in *Asuncion*, Paraguay, which provided for the creation of a common market among these four countries known as the 'Southern Common Market' (Mercosur, 2001).

While membership of Mercosur is open only to South American states, the treaty provides for other countries or regions joining the common market through free trade agreements. Mercosur has since its inception been joined by 'associate members' such as Chile (1996) and Bolivia (1997). Currently, negotiations are underway with several other South American countries, especially with the Andean Pact (consisting of Columbia, Peru, Ecuador, Venezuela and Bolivia), Central American countries, the European Union as well as the SADC (Mercosur, 2001). A 'Framework Free Trade Agreement' between the SADC and Mercosur was signed by the South African president in December 2000, with the aim of increasing trade between these two trade blocs. From Southern Africa's perspective, Mercosur provides a market that has an aggregate GDP more than 7-fold greater than that of the SADC.

The countries which are signatories to the Mercosur treaty together form a very large and significant market, both in terms of population size and value of output. According to 1999 statistics (CEI, 2001), the total Mercosur population numbered 232.1 Million, has a combined GDP of US $ 1,15 Trillion and a GDP per capita of US $ 4.965. Manufacturing accounts for the largest share of GDP per economic activity with a

contribution of 23%. Exports in 1999 to non-Mercosur countries amounted to US $ 58,936 Billion, while imports were US $ 64,032 Billion. Intra-Mercosur trade was US $ 15,379 Billion in exports and US $ 16,015 Billion in imports. At present, trade between South Africa and Mercosur countries is still insignificant. In terms of the trade in textiles, the same applies, with no South American country falling into the largest 25 trade partners in terms of total trade.

The impact of the Mercosur treaty, or at least the framework agreement between SADC Mercosur, has a number of potential consequences for the South African textile industry. The advantage may be that the South American forms a largely untapped area in terms of market access, and potentially holds significant advantages through the expansion of bi-lateral trade.
It is uncertain, however, if South African textile products in the lower end of the market would be able to successfully compete with South American products, although significant opportunities are likely to exist in the upper end of the market. In many ways South American economies and markets are in a similar stage of development to South Africa's market. Opportunities are likely to be available for those South African textile companies that are already successfully exporting and shown to be internationally competitive. Opportunities are more likely to exist in the field of technical and advanced fibres and fabrics, as opposed to the bottom end of the market.

Yet at the same time, a trade agreement with Mercosur also holds new threats for the domestic textile industry. The South African clothing industry may use the South American market to access raw materials at a lower cost than those available locally, which is a particular concern that has been expressed by the textile industry (Kaplan, 2001).

South Africa's membership of various trade agreements and protocols, notably with the EU, the US and within the region, has important implications for its textile industry. These trade agreements grant reciprocal preferential access to the member countries' markets, and are usually in the form of reduced (or abolished) tariff-based trade barriers. With the South African textile industry being especially vulnerable to lower-priced imports originating from the Far East, opportunities presented by preferential trade agreements (notably with the EU and US) are of critical importance for the industry's long-term survival and sustainability. However, the exploitation of opportunities provided by preferential market access to a large extent hinges on the successful co-operation within the extended clothing-textile pipeline. Upstream industries (e.g. cotton, synthetic yarns etc.) and downstream industries (i.e. the clothing manufacturing sector) can have an important impact on the efficient and cost-effective production of textiles. Their role in this is discussed in the next chapter.

9. Upstream and Downstream Industries and Issues

9.1 Co-operation in the Textile – Clothing Pipeline

A large number of manufacturing processes are required before a completed garment is sold by the retail sector. Beginning with the extraction, production and farming of raw materials, including oils, dyes, animal and vegetable fibres, these materials are converted by the primary industries and supplied to the textile industry, which transforms them and adds value. From here on it is supplied, via various intermediaries (including agents, transport companies etc.), to the different segments of the textile industry (e.g. automotive textiles, blankets, curtains, carpets etc.) as well as the clothing industry, where the textile materials are further transformed (adding value) into - amongst others - finished garments. Finished textiles are then supplied, mostly through the clothing industry, to retailers and their intermediaries, who in turn market and sell these products to the final consumers.

It is thus clear that the textile – clothing pipeline consists of a number of interdependent industries and intermediaries, with each industry transforming its input materials into a product that significantly differs from its raw material state, or – in the case of intermediaries and agents – playing an important part in linking one or more different industries to each other. Each role player thus adds value to the final product, contributing to industry output and by implication GDP.

Through this chain of interdependencies, it is also clear that the actions, manufacturing processes used and operating efficiency of each player has an effect on both downstream *and* upstream industries. Inefficiencies in the supply of raw materials, or price increases, have a knock-on effect right through to the final consumer. Conversely, inefficiencies in the clothing industry (and related high prices or quality inconsistencies) are likely to have an impact on consumer demand, and thus indirectly influence demand for the products' original labour, economic and raw material inputs.

The ability of the clothing industry to take on significantly large orders from the local or international retail sector hinges both on its ability to have adequate working capital, technology and management know-how, as well as its ability to source its textile requirements within pre-determined price, time, quantity and quality parameters. An unreliable supply (in any of the previous variables) would seriously jeopardise the ability of the clothing industry to fulfil the demands of its clients (the domestic and international retail sector), while this in turn may lead to the supply being sourced elsewhere (often at greater cost). On the other hand, the inability of the (downstream) clothing industry to manage its working capital, and consequently its inability to take on production orders for this reason, will harm the textile industry through depressed local demand.

It is often maintained that along the 'raw material – textile – clothing – retail pipeline', most of the value is added in the middle stages, while the greatest portion of the price mark-up is added by the retail sector. In many cases the mark-up by the retail sector is a multiple of the mark-up added along the *entire* pipeline up to that point. Nonetheless, much pressure is exerted by the retail sector on 'upstream' industries, and as a consequence margins are generally very small. This often prevents adequate investment in technology and working capital, and leads to a vicious circle of dwindling margins and outdated technology.

The realisation by the many role players in the pipeline as to the numerous, vitally important, interdependencies should be the first step to ensure sustainability and long term growth of the industries. This naturally leads to a need for the establishment of both informal and formal working relationships, partnerships and trust by the various role-players, as well as a greater understanding of each other's direct and indirect interdependency.

Of the respondents of the survey conducted in the South African textile industry (see Appendix 11), 19% noted that they actively co-operated with their clients (being in many cases the clothing industry). 84% said that the nature of this contact included the exchange of information, while 37% said that they also had social contact with their clients. While these values can be considered to be relatively high, the information exchange in particular is likely to be limited to non-sensitive information, including product specification and quality issues. But in order to be a strong and united force, especially in trade related matters (such as large export orders etc.), it is vital that this information exchange also includes a certain amount of strategic information and even arrangements that may lead to shared savings. For example, the abolishment of duties when exporting to certain regions (notably the United States following the African Growth and Opportunity Act - *see below*) will benefit the clothing-textile pipeline more if the clothing exporters would pass on some of these 'savings' (to the textile industry) in return for quality improvements, technological development or even shorter turnaround times of their suppliers (i.e. the textile industry).

The survey also showed that co-operation between the textile industry and its suppliers is generally good, and 79% of respondents said that they co-operate actively through some form of information exchange. However, the competitive nature of the textile industry was apparent when only 24% of the respondents said that they co-operate with their competitors in some way or other. Of these, 20% said that this co-operation is in the form of information exchange, while 60% of the respondents that co-operated said that it was purely based on trade. This re-enforces the impression that the South African textile industry is fragmented in its approach to so-operation and does not show a 'united' front – which may be one of the essential components of successful (direct or indirect) export market penetration.

The lack of co-operation in the pipeline, which includes a lack of information sharing, constrains the competitive benefits that can be obtained along the pipeline. For example, the Africa Growth and

Opportunity Act (AGOA, see Section 8.3), which came into force towards the end of 2000, will be of limited benefit to the South African textile and clothing sectors in the absence of a greater cementing of working relationships. In fact, a source in one of the largest textile manufacturers in South Africa maintains that good working relationships and trust between the clothing and textile industries are one of the most important requirements for benefiting under the AGOA (Friedman, 2000). As textiles on their own are precluded from directly obtaining special benefits under the AGOA, while clothing exports are not (subject to certain conditions being met), co-operation between the clothing and textile sectors is imperative. The South African textile industry is best equipped (especially from a logistics basis) to become the supplier 'of choice' to those clothing manufacturers wishing to take advantage of the vast opportunities offered by the provisions of the AGOA, further strengthening the need for constructive partnership and co-operation. South Africa is also one of only 4 countries that have, as of April 2001, qualified for eligibility under the special textile / garment provisions of the Act. Only eligible countries' textile inputs may be used in the manufacture of garments intended for duty-free export to the U.S. under the AGOA special textile and garment rules.

9.2 Upstream Industry

In the context as it is used here, 'upstream' industry refers to the main supply sectors of the textile industry. While 'supply' is a very broad term, and typically encompasses flows of tangible goods (material inputs), services / utility (such as electricity) and information (such as training, institutions etc.), the focus in this section is on tangible flows, in particular the input materials. These sectors form the main players within the textiles- clothing pipeline, which refers to the industries in the primary sectors (e.g. cotton growing) through to secondary industries such as textile manufacturing and raw material production (man-made fibres), clothing manufacturing and the retail sector.

Most input materials, such as synthetic fibres and cotton, are internationally traded commodities. This means that in the presence of international trade, price fluctuations occur on a world-wide scale in response to aggregate world demand and supply. International tradability ensures that, especially in the case of the raw material smaller producers, output which is not sold domestically can be sold internationally. A domestic surplus no longer has the effect of (necessary) placing significant downward (price) pressure on that commodity, as there is ready demand for that product internationally.

Conversely, a domestic shortage no longer automatically leads to rises in the price of that commodity, as the excess demand can be imported. While this is the general trend, tariff and non-tariff barriers to trade, as well as quality, lead-time and logistics costs can have a significant impact, at least in the short to medium term.

The consumption of fibre by the South African textile industry is dominated by cotton and 'man-made' fibres (such as polyester and acrylic).

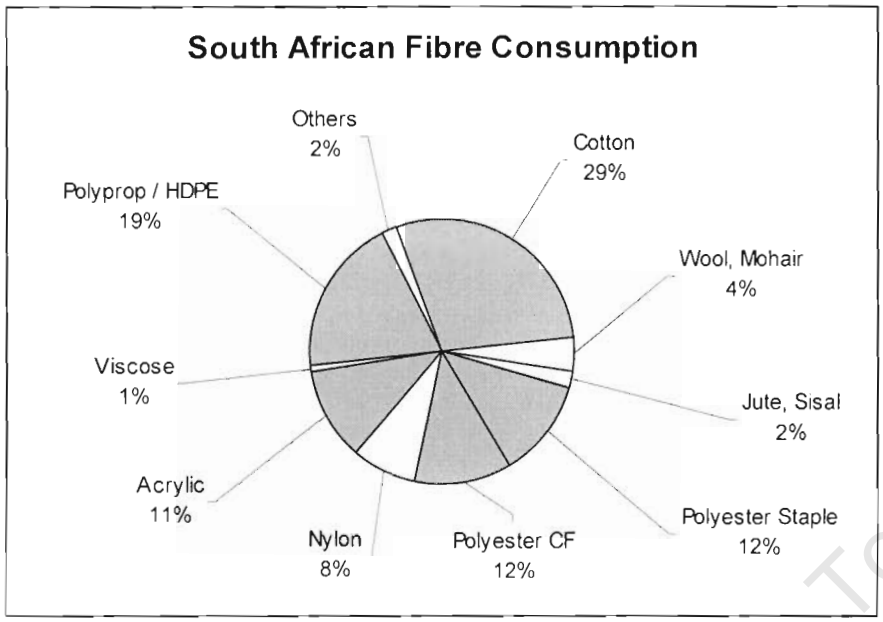

Fig. 9.1 South African fibre consumption (Jafta and Jeetah, 2001)

The price of many raw materials used in the textile industry is directly, or indirectly, affected movements in the oil price. The price of oil, which has risen in price from around US 10 $ / barrel at the start of 1999 to over US 32 $ / barrel in October 2000 (it has recently retreated to approximately 25$), has had a significant *direct* impact on the cost of synthetic fibres, which use oil in the production process. While this oil price movement signifies a $-based price increase of over 300 %, the concurrent depreciation of the South African Rand meant that the price increase was closer to double this percentage. The increase in synthetic fibres has consequently lead to upward price pressure on cotton, which according to an industry source has a positive correlation with the price of synthetic fibres (Bruwer, 1999). This as many of these materials are direct or indirect substitutes of each other, - most textiles can be manufactured from either natural or synthetic fibres. Economic theory thus suggests that price movements of (in this case) synthetic and natural fibres are likely to be relatively parallel to each other.

9.2.1 The Cotton Industry

There are conflicting statistics regarding the size of the local cotton industry, especially in terms of the percentage of local demand for cotton that is in fact being produced in South Africa.

According to the *Textile Federation*, the local cotton industry is afforded unwarranted protection, even though it only satisfies about 33% of local demand (Textile Federation, 1998b). Government policy requires that South African cotton spinners first purchase all the local cotton supply before being able to obtain import permits (Jafta and Jeetah, 2001). The local consumption of cotton is in the order of 450.000 bales, of which local supply accounts for 'only' 150.000 bales (Textile Federation, 1998a).

On the other hand, figures released by *Cotton South Africa*, an umbrella organisation consisting of government, labour, consumer, industry and farming representatives and concerned with all aspects relating to cotton, suggest that the local cotton industry supplies approximately 65% - 70% of the local cotton demand at present (Bruwer, 1999). This is up from approximately 50% in 1998. It appears that the government is using figures supplied by Cotton South Africa, as policy documents on the textile industry show that approximately 50% of the country's cotton fibre requirements are grown locally, the balance being imported largely from SADC countries (DTI,1998a).

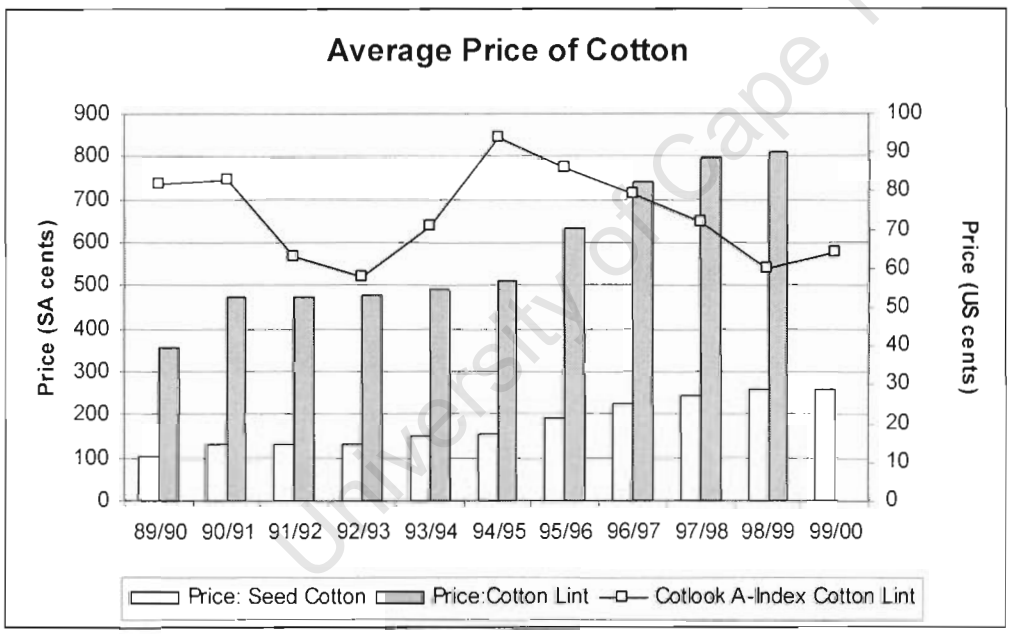

Fig. 9.2 Average Cotton Prices of Locally Produced Cotton (Cotton South Africa, 1999).

Figures published by Cotton South Africa show that the local textile industry's fibre inputs consist of approximately 27% cotton, and 73% non-cotton fibres (Cotton South Africa, 1999). This value has been relatively constant over the 1989 – 1999 period, although it shows a short-term year-on-year decrease between 1997 (30.5%) and 1998 (27%). It is likely that cotton (being a natural product) will continue losing 'market share' in the medium to long term to man-made fibres (such as polyester), whose prices may decrease at a greater rate (than cotton) due to rapid improvements in production technology.

On the other hand, it is thought that the upward pressure on polyester prices (at least in the short to medium term) due to much higher international oil prices will allow cotton producers to charge higher prices for their output, without changing the price-differential between the two 'substitute' products. However, some international cotton-experts are of the opinion that cotton output is unlikely to increase significantly over the next 5-10 years, and that "most of the increase in fibre consumption over this period could be supplied by polyester" (Textile Federation, 2000a).

There is evidence that the quality of locally produced cotton adequately meets the requirements of the South African textile industry (i.e. mainly of cotton spinners), although concern has been expressed about the 'variation in the specification of qualities by spinners' (World Bank, 1991).

According to the data in Fig. 9.2, it appears that the locally produced cotton's price movement does not closely resemble the movements in the Cotlook-A index, which is used as a guide / proxy for (determining) 'world' prices (Cotton South Africa, 1999). However, as the Cotlook-A index is denominated in US $ terms, and considering the declining value of the local currency, world prices expressed in ZAR terms have generally increased. Also, as mentioned previously, any price movements in the price of substitute products (e.g. synthetic fibres) will have an effect on the Cotlook cotton index and thus the local price of cotton.

9.2.2 The Synthetic Fibre Industry

South Africa produces and supplies a variety of synthetic fibres to the local textile industry. Not all of the locally produced synthetic materials are used in South Africa, though, and the local industry both imports and exports part of its synthetic input material requirements and output respectively (Van der Walt, 1999). The quality and specification of some of the local materials, as well as the price-quality relationship, have been mentioned as being amongst the reasons for some textile manufacturers choosing to import. A further reason may be the fact that both local and overseas suppliers of synthetic fibres specialise in the production of *some* materials, and thus achieve economies of scale in their specific field. South African producers can in such cases take advantage of competitively priced materials.

Lower import duties have resulted in increased levels of imports and lower input prices. On the other hand, some of the efficiency improvements in the production of synthetic fibres (and their impact on price) are likely to be negated to some extent due to higher production costs. Rising international oil prices (oil being an important input component in the manufacture of e.g. polyester) are likely to place upward pressure on the price of some synthetic fibres. This in turn puts upward pressure on cotton prices (a 'substitute' product in many instances), as cotton producers are provided with the opportunity to exploit the greater price differential (between synthetics and cotton) brought about by higher synthetic fibre prices.

The use of synthetic fibres appears to be on the increase, especially as new technology allows these fibres to be produced in an increasingly efficient and cost-effective way. World-wide consumption of synthetic textile fibres has increased by 2% in 1998, with polyester filament output in particular increasing by 6% during the same period (a time when most of the world's economies actually faced a significant downturn and subsequent depressed consumer demand) (Textile Federation, 2000a).

There are approximately 12 producers of synthetic fibres in South Africa, who supply the local industry with nylon, polyester staple and filament, acrylic and polypropylene fibres (DTI, 1998a). These include well known companies such as Hoechst and South African Nylon Spinners (SANS) etc.). There are, however, no local producers of viscose fibre, although cellulose (as used in the production of viscose fibre) is produced locally (DTI, 1998a).

9.2.3 The Wool Industry

The wool industry is an important component of the South African economy, and is a supplier to both the local and the international textile industry. It is, however, a small player internationally in terms of the total wool produced world-wide. This means that it is exposed to international demand and supply forces and has little influence on setting the price of wool. The state of the domestic wool industry is thus directly linked to the international variables affecting wool demand and supply, which includes (not lastly) international fashion trends. The wool industry consists of various sub-industries, including merino (the most common and largest part), mohair and angora.

While the average price of wool has increased significantly between the 1998 / 99 and the 1999 / 00 season, output of the South African wool industry decreased by over 8% from 54.3 million kg to 49.8 million kg. Total sales, as a consequence, increased only slightly to R 512 Million in the 1999 / 2000 season. Exports have decreased in the period under review, and this may be attributable to greater domestic consumption of wool and the fact that the price of wool is linked to the world price anyway (i.e. producers are unlikely to achieve significantly greater prices on the export market in the long run). According to Cape Wools (2001), most of South Africa's wool exports (by value) go to Italy (31.48%), while a significant portion goes to Germany (13.53%), China (10.95%) and France (10.12%). This data applies to the period July 2000 to May 2001. Wool production in South Africa is widely distributed, although the bulk is produced in the Eastern Cape, the Free State and the Western Cape. Together, these provinces account for almost 70% of South Africa's wool production. This is convenient for the Western Cape textile and clothing industries, although the country's excellent infrastructure ensures that logistics do not account for a significant disadvantage.

As is the case with a number of the textile industry's raw material requirements, their price movements in the medium term are often indirectly related to the international oil price. The reasons for this have been

highlighted before: oil is one of the materials used in the production of synthetic fibres, which are a input material in many textiles. Various textile input materials can be (roughly) substituted, and economic theory shows that substitute products portray largely similar price movements. Suppliers of a substitute product (in this case wool) can demand more for their wool if the price of wool's relatively close substitutes increases significantly.

The table below provides some key statistical indicators for the South African wool industry (Cape Wools, 2001):

Key Industry Statistics of the South African Wool Industry			
Indicator	**1998 / 99**	**1999 / 00**	**% Change**
Production (m kg)	54.3	49.8	- 8.2
Sales Value (R Million)	497.6	512.8	3.1
Average Greasy Price (R/kg – Merino) (i.e. untreated)	10.5	12.5	19.5
Average Clean Price (R/kg – Merino)	16.7	20.4	22.4
Greasy Wool Exports (m kg)	18.9	14.4	-23.5
Scoured Wool Exports (m kg)	6.2	6.1	-1.2
Production by Province / Region (m kg)			
Eastern Cape	13.1	11.4	-13.0
Free State	11.8	10.9	-7.6
Western Cape	9.8	9.0	-8.2
Northern Cape	6.3	5.7	-9.5
Mpumalanga	3.8	3.5	-7.9
Lesotho	1.9	2.2	15.7
Kwazulu-Natal	1.5	1.3	-13.3
Other	1.5	1.4	-6.7

Table 9.1 Key Statistics of the South African Wool Industry (Cape Wools, 2001)

South Africa currently produces 63% of the world's total mohair supply (ten years previously it produced less than 50%) (Mohair South Africa, 2001). Other producers include the USA (15%), Lesotho (7%), Turkey (6%), as well as Argentina, Australia and New Zealand (3%). The total output of the South African mohair industry was 4.3 million kg in 2000, a year in which producers realised R225 Million (up 26% from 1999) and achieved an average sales price of R52.28 per kg (up 25% from R39.46 per kg). The price of mohair has risen steadily from a low of just over R10 per kg in 1993 (the comparative 2000 value *after* accounting for inflation is approximately R40). While mohair accounts for less than 10% of the South African wool industry, its value per kg exceeds that of wool on average by a factor of almost 5. As a consequence, total sales are just under half that of 'normal' merino wool.

Exports of mohair account for a significant part of the domestic production, mainly to countries such as Italy and England, as well as to France, China and Taiwan. Locally, at least 8 manufacturers manufacture textile products from mohair (Mohair SA, 2001). While mohair was traditionally used as an input in the production of luxury fibres, the versatility of the product has lead to increasing utilisation of mohair for non-fashion and household textiles. South Africa's dominance in the world mohair market, both in terms of production output and research, provide the domestic textile industry with an excellent platform to manufacture highly differentiated mohair-based textiles. Of course, mohair can be blended with most other fibres, or used in its pure form. While, in real terms, mohair is at its highest price level in over ten years, its uniqueness and ability to (product) differentiate could provide the domestic textile industry with exciting opportunities to penetrate niche and export markets. While the down-side to mohair is that it is a product subject to fashion trends (not unlike many other fibres, though), innovative marketing, stringent quality controls and product differentiation should ensure that it will be of growing importance to the South African textile industry.

9.2.4 The Dyestuff-Manufacturing Industry

In South Africa, the dyestuff industry is not entirely an "upstream" industry as used in this context, due to the structure of dyestuff manufacturing and occurrence of large-scale vertical integration of dyeing processes. Most large textile manufacturing enterprises (such as Frame, Berg River and Da Gama) have their own dye-houses, and as such do not really deal with external dye-houses. Even some of the smaller producers have their own dye-houses, while also doing some commission dying to render such operations financially feasible (Claassens, 2000). The industry is collectively represented by the South African Dyers and Finishers Association (SADFA). The SADFA focuses on the wet textile processing industries. SADFA has branches in Cape Town, Port Elizabeth, East London, Durban and Johannesburg, but is traditionally the strongest in Kwazulu / Natal.

9.3 Downstream Industry

The term 'downstream industry', as it is used here, refers to industries that provide an important market for the output an upstream industry. In this case, the most important downstream industry of the textile industry is the clothing industry.

9.3.1 The Clothing Industry

Although this report deals primarily with the South African textile industry, the clothing industry is an integral and important part of the raw material – textile – clothing pipeline and can thus not be ignored. The close relationship between the clothing and textile industries is best explained through the often inter-linked nature of their production activities, as well as the vertical integration of some parts of these industries. While the clothing and textile industries are, in certain ways, entirely independent of each other, there are many factors accounting for their close relationship, mainly due to the fact that the domestic textile industry is by far the most important supplier of raw materials to the domestic clothing industry.

The clothing industry has had a similarly difficult task (as has the South African textile industry) in dealing with the opening of the local market to foreign competition. It has had to leave behind an era that afforded it much economic protection through a wide range of trade measures that discriminated against imports, and subsidised exports. The government has committed itself to the phase-down of duties and tariffs in accordance with GATT / WTO regulations (in fact, its aim is to scale down the tariffs faster than it is obliged to do), which means that the clothing industry can no longer expect protection from foreign competition. However, one significant difference exists between the effects of liberalisation on the clothing and textile industry. Whereas both industries have felt much pressure on their sales side, the clothing industry has benefited significantly from lower input costs through better-priced imports. Since the opening of the markets (i.e. lowering of trade barriers such as import tariffs) the clothing industry now has the opportunity of taking advantage of the most competitively priced input materials (mainly textiles) available internationally. This has lead to a certain conflict of interest between these two industries, where one (the clothing industry) lobbied the government for the scrapping of certain import tariffs, while the other (textile industry) tried to slow down their phasing out.

The clothing industry recorded sales output during 2000 of R 10.523 Billion, which was slightly larger than that of the textile industry (Statistics SA, 2001c). This industry is located mainly in the Western Cape and in Kwazulu-Natal, where significant parts of the (upstream) textile industry are also situated. The industry (in the year 2000) was a net importer of clothing of approximately R350 Million, in relation to the total value of exports of R 1.605 Billion and imports of R 1.955 Billion.

The composition of sales in the clothing industry can be broken down into wearing apparel and knitted, crocheted articles (Statistics South Africa, 2001c). Wearing apparel accounts for 84% of sales, while knitted and crocheted articles account for 16%. In terms of exports and imports, there is no clear distinction. The largest export categories are mens' woven cotton trousers, womens' knitted cotton blouses and mens' woven wool suits. The main import categories are mens' woven trousers (cotton), mens' woven shirts (cotton) and cotton T-shirts (Clofed, 2000).

The following table provides a brief quantitative overview of the South African clothing industry:

Overview of the South African Clothing Industry				
Category	**Amount R Million**	**Percentage Breakdown**	**Growth Rate (Percentage)**	**Main Destination of Exports and Source of Imports**
Total Sales (2000)	R 10.523	100%		
Wearing Apparel	R 8.830	84%		
Knitted, Crocheted Articles	R 1.693	16%		
Exports (2000)	R 1.605		1995-2000: **+75%**	USA, UK, Zambia, UAE
Imports (2000)	R 1.955		1995-2000: **+90%**	China, Malawi, India, Hong Kong

Table 9.2 Overview of the South African Clothing Industry (Statistics South Africa, 2001c;Clofed, 2000; DTI 2001c)

10. Other Issues Affecting the Textile Industry

10.1 Raw Material Input Cost Developments

Cotton, synthetic fibres (e.g. polyester, nylon and acrylic) and wool are three of the most important fibres utilised by the South African textile industry, and some of the local demand for these materials is grown and/or produced locally. Many raw materials, especially those not produced locally or for which local demand exceeds local supply, are denominated in US $ prices. This means that even though a particular raw material might be produced only a short distance away from a factory, within the same country, it still costs a reasonable equivalent of the world price. Any (slight) price fluctuations would be largely due to lower transport costs of the local supply. This exposes the local industry to the benefits *and* costs of currency fluctuations and international aggregate demand and supply, and may or may not work in the industry's disfavour.

Where there are barriers to the free trade in materials (or any goods for that matter), world prices lose some of their relevance. The South African textile industry is an overall net importer of fabrics and made-up textiles, while being an overall net exporter of fibres and yarns (especially wool, of which over 90% is exported, and man-made yarn). The status of being a net exporter of many raw materials does not mean that the country can really set its own price. While small price deviations may occur, the price of raw materials (where these are of a commodity nature) is always linked to the world price for that commodity. Although world demand for many input materials has taken a slight knock following depressed economic conditions in the strong Far East countries such as Japan, prices have still risen significantly over the past few years. Some of this is the result of the rising crude oil price, which appears to have a knock-on effect not only on downstream industries (such as the synthetic fibre industry), but also that of substitute industries (through greater demand) producing natural fibres.

According to the survey conducted in the textile industry, some producers found that increasing wool prices were significantly increasing production costs (see Appendix 11). Views have also previously been expressed by the Textile Federation (date unknown) that legislation and cotton industry arrangements were placing upward pressure on the price of cotton, and that domestic cotton prices are higher than they would be if obtained on international markets.

The producer price index (PPI) is a measure of the input prices that are faced by an industry. These input costs include labour costs, raw materials, interest charges etc. Between 1995 and 2000 (1995 being the base year of measurement), the PPI for the textile industry has increased from 100 to 122.6. At the same time, the clothing industry PPI has increased from 100 to 127.8.

Production Price Index			
1995=100	**Manufacturing**	**Textiles**	**Clothing**
Weights	70%	2.5%	2%
1995	100	100	100
1996	107.8	105.9	105.5
1997	115.9	111.3	114.3
1998	120	116.7	119.4
1999	126.3	118.9	122
2000	136.2	122.6	127.8

Table 10.1 Production Price Index (Statistics South Africa, 2001b)

10.2 Energy

Electricity consumption leads to another important input cost. According to the *Textile Federation,* the industry is the second largest consumer of electricity in towns and cities across South Africa in which it is situated (Textile Federation, 1998c). The textile industry consumed approximately R 155 Million in electricity in 1996 (Statistics South Africa, 2000a). While a substantial proportion of the industry's energy requirements are derived from electricity, significant use is also made of fossil fuels, especially for heating and drying newly-dyed fabrics.

In South Africa, the distribution of electricity is still of a monopolistic nature, yet Eskom, the national electricity utility, has as its official policy that it seeks to provide energy cheaper than anywhere else in the world (Eskom, 1999). The price decreases (in real terms) that Eskom aims to achieve are on the back of internal efficiency gains through productivity improvements, reduced operating expenditure and cost containment (Van Horen, 1997). Eskom has introduced a 14 % reduction in real prices between 1987 and 1991, and undertook to decrease it by 20 % between 1992 and 1996. It has also endeavoured to reduce the real cost of electricity by 15 % between 1995 and 2000 (Eskom, 1999). For example, the 1997 and 1998 price increases were 3.6 % and 1.9 % below the changes in the average consumer price index (CPI), and accounted for a cumulative 13.6 % reduction between 1995 and 1998 in real terms (Eskom, 1999). According to a recently published study (Financial Mail, 2000a), South Africa's electricity utility *Eskom* sells electricity at less than half the price of that in other (developed) countries. Using as a measurement UK pounds, the currency in which the comparative study was conducted, South Africa's electricity price per kWh (kilo-Watt hour) was approximately £ 0.01, while that of the US (£ 0.04) and most European countries (£ 0.04 - £ 0.08) was substantially higher. This allows for a certain amount of comparative advantage for the South African textile industry *vis-à-vis* its (developed) world competitors. However, inefficient use of electricity (for example through outdated technology and / or manufacturing processes may well erode most or all of this advantage.

Of the total electricity supplied to South African consumers, approximately 46 % is used by the manufacturing sector. This is by far the largest consumption sector, followed by the mining and residential sectors, each accounting for 20 % of electricity consumed (NER, 1996).

As the textile industry is a relatively extensive user of electricity (Textile Federation, 1998c), the cost of electricity is an important co-determinant of variable input costs. Since the emphasis of the country's electricity provision industry is on cheaper electricity, its price is decreasing in real terms, which is in turn beneficial for manufacturing concerns. A further stated objective by Eskom is towards making electricity tariffs more cost-reflective, which will in turn see a restructuring of tariffs in line with the costs of provision, albeit within socio-economic constraints. The main result will be a shift in price burden away from high-voltage consumers, and towards subsidised residential and rural consumers and this trend should benefit manufacturing concerns (Eskom, 1999). Notwithstanding this, inefficient electricity consumption is having a negative impact on the South African textile industry, especially highly energy-intensive production processes such as heating and drying of newly-dyed textiles. This provides scope for the introduction of new technology leading to greater energy efficiency. Constraints such as lack of access to capital and other considerations often render any capital acquisitions in this field financially feasible.

However, a pilot study conducted by *Industrelek*, the consulting division within *Eskom*, showed the potentially significant savings (energy and financial) that can be achieved by the textile industry through the introduction of new technology (Financial Mail, 2000b). This study was undertaken at *Da Gama*, one of the largest textile producing plants in South Africa, and showed how considerable energy savings could be achieved through the application infra-red technology that applied the heat directly to the fabric. The results were not only an improvement on the 73% heat loss (and cost thereof) that accompanied the use of the previous technology, but also faster drying times and improved fabric quality. These results are important for any efforts by the South African textile industry to become internationally competitive and efficient.

While the short to medium-turn outlook for relatively inexpensive electricity is good, one should take note of the fact that the vast majority of electricity (1994 = 89 %) is still generated using coal-fired power stations (Eskom, 1995). As this is now generally regarded as an environmentally unsustainable method of generating electricity due to the increasing scarceness of this natural resource (coal), more environmentally friendly alternatives will need to be found in the long term. This is likely to affect the current trend of falling electricity prices in South Africa. There are currently great concerns that the impending privatisation of Eskom is going to lead to major increases in electricity tariffs (Kaplan, 2001). In future, electricity prices will need to reflect the real cost of providing this service, in order for it to remain a sustainable supply. In other words, electricity prices are likely to increase significantly over the next few years, which means that

industry will have to become increasingly efficient in the use of electricity, or else be faced with mammoth additional production costs (NER, 2001). According to the textile industry survey conducted for this research (see Appendix 11), 80% of the respondents stated that electricity costs are a significant manufacturing input cost in their company.

10.3 Water

The price of water has traditionally been very low in South Africa. There are various reasons for this, not least of which being the strong emphasis in the past was on supply-management as opposed to demand-management, as well as an inequitable distribution of the available water resources. This distorted market signals (for example through excessive supply resulting in a too low price) and thus did not equate water's price to its real value. Environmental and social considerations were also often ignored, meaning that many of the externalities related to water provision were not incorporated into its price.

The Water Act 54 of 1956, which was abolished at the end of 1998, has made way for the new Water Act 36 of 1998 and consequently a more "equitable" and "sustainable" form of water supply and demand management. This new act envisages an increased focus on the application of the most under-used water demand management tool, namely water pricing, which is likely to see industrial water being charged at significantly higher rates than in the past (to ensure sustainable water use), and much more stringent quantitative and environmental monitoring geared towards the industrial sector (the reduction and prevention of water pollution being one of the main focus areas) (National Water Act, 1998).

Water pricing is set to not only value the resource according to its scarcity, but geared towards full-cost recovery to a much greater extent than was done previously. This means that all the costs in the provision of water will be incorporated into the water price (and related effluent charge), including capital, operating, social and environmental costs. Likewise, it will be priced according to the *marginal* cost of providing it, leading to an exponential volume / price curve.

Supply management entails the provision of water through water infrastructure development, as opposed to demand management, which makes use of efficient pricing methods, education and a reallocation of the historical (inequitable) water rights. The price of water can thus safely be assumed to rise significantly over the next years, not only to help finance existing (and future) water infrastructure where necessary, but also to act as a deterrent for inefficient and wasteful water use.

The textile industry requires water during the following processes (DWAF, 1993):

- Processing
- Steam generation
- Product washing
- Plant and Equipment washing
- Air conditioning and
- Cooling systems

The Price of Water

Water prices vary greatly throughout the country, and are generally lower the closer an area is to a natural water resource. Wide regions in South Africa are suffering from a shortage of water, which has forced water demand management (i.e. using water prices that reflect the 'scarcity' value of water) to become the chosen water management tool. The Gauteng area, for example, already has far higher water prices than the Western Cape, and it is expected that prices will further increase in line with the need to use the limited (water) resources as efficiently and effectively as possible. The next table gives an indication of water prices (for industrial use) in the main metropolitan regions of South Africa, along with projected price increases in the coming years.

A variable that is of interest for the coastal regions is the fact that the cost of desalination of seawater has been calculated as being in the region of R5 /kl, meaning that coastal regions should not face water charges in excess of this value in the long term (Raimondo, 1999). Inland, the industrial price of water has already reached the ZAR 5 mark, and is seen as an important cost component.

Metropolitan Council	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Financial Year:	'95/'96	'96/'97	'97/'98	'98/'99	'99/'00	'00/'01	'01/'02	'02/'03	'03/'04	'04/'05
Johannesburg	3.00	3.60	4.70	5.00	5.50	6.33	7.27	8.36	9.62	11.06
Durban		1.77	1.99	2.53	2.89	3.32	3.82	4.40	5.05	5.81
Cape Town Municipality		1.80	2.03	2.27	2.50	2.88	3.31	3.80	4.37	5.03
Tygerberg Municipality			1.75	1.93	2.25	2.59	2.98	3.42	3.94	4.53
Helderberg Municipality		3.30	2.46	2.80	3.28	3.77	4.34	4.99	5.74	6.60
Blaauwberg Municipality	1.69	1.81	2.04	2.27	2.46	2.83	3.25	3.74	4.30	4.95
Oostenberg Municipality			3.04	1.86	1.99	2.29	2.63	3.03	3.48	4.00
South Peninsula Municipality	1.47	1.80	2.03	2.27	2.45	2.82	3.24	3.73	4.29	4.93
	Note: Projected future prices were calculated assuming a 15% annual growth rate									

Table 10.2 Actual and Projected Prices (in ZAR/ kiloliter) of Water in South Africa (*for Industrial Use*) (Van Beers, 1999)

It is obvious that the incentive to use water more efficiently would be greatest in the Gauteng / Johannesburg region, where water (input) prices are more than double that of the Durban and Cape Town regions. An article that appeared in a Cape newspaper does, however, highlight the likelihood of imminent water price increases in the greater Cape Town region (Cape Times, 1999).

Rise in costs of water looms in W-Cape

"In an effort to control a growing demand for water, the Cape Metropolitan Council has allocated R11.8 Million to eight local authorities for water education programs. The Western Cape was identified as one of the first regions in South Africa which is likely to run short of water. All suitable dam sites have been developed and the future cost of water is expected to rise considerably."

Current and expected future water costs for the regions listed below can be seen in the following diagram, which shows the (approximate) total current and expected water costs per 1000 kl. of consumption (van Beers, 1999). Whereas Johannesburg and Durban have a single municipality each, the Cape metropolitan region is (at present still) divided into 5 sub-structures, each having autonomy regarding water tariffs and demand management. There are however plans to create a single 'Uni-city' metropolitan council at the end of 2000.

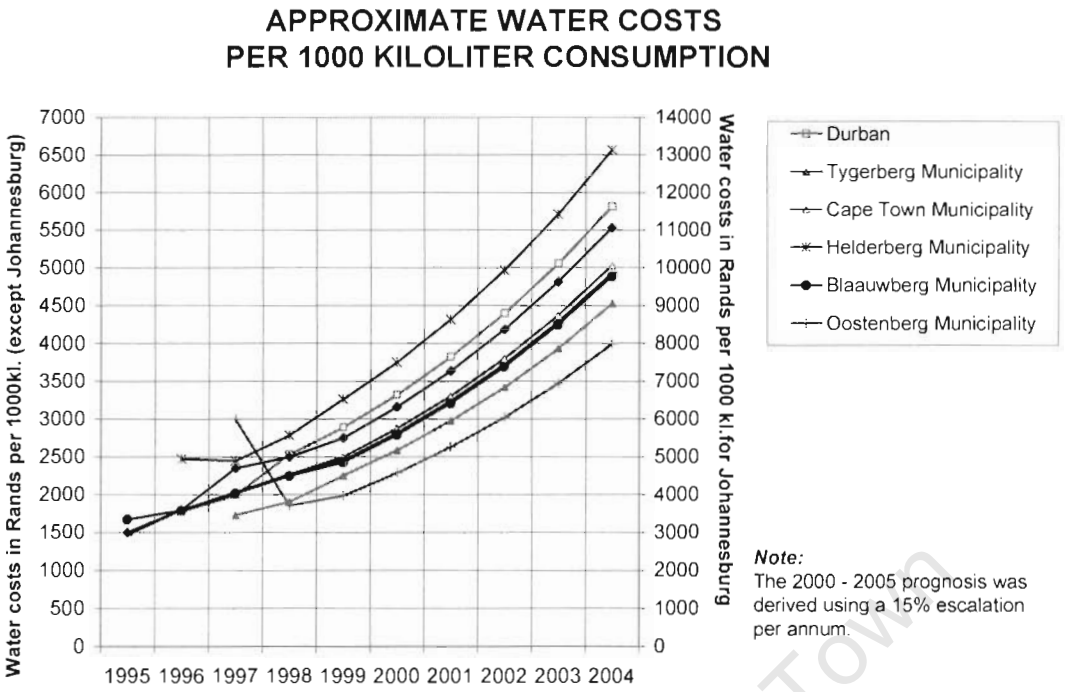

Fig. 10.1 **Estimation of Future Water Charges in the Main Metropolitan areas of South Africa (Van Beers, 1999)**

The textile industry (mainly the *spinning, weaving and finishing of textiles* sub-sector) incurred water costs of approximately R 26 Million in 1996 (Statistics South Africa, 2000a). Considering the industry's turnover of R 9.2 Billion during the same period, these costs were a relatively insignificant 0.3 % (of turnover). This is likely to change considering the national and local government's new emphasis on water pricing (and full cost recovery), as well as stricter compliance with environmental legislation.

10.4 The Cost of Capital and South African Interest Rates

The cost of capital has a direct effect on the level of investment in an economy. The interest rate, i.e. the direct cost to an entity for making use of loan finance, is one of the dominant variables that have an impact on investment decisions, while ancillary variables include special tax write-off allowances, incentive schemes and the like. A high interest rate thus has a negative effect on investment levels.

South African industry is faced by real interest rates (i.e. difference between nominal interest rates and the rate of inflation) that are often far in excess of those prevailing in developed countries. The South African (textile) industry is thus faced by an extra cost burden in relation to its developed country counterparts.

The nominal interest rate has fluctuated mostly in the 17 – 27 % band since 1990, although it stabilised at its lowest level in 20 years of 13,5 % during 2001. The prime rate of interest, as shown in the graph below, is used as a yardstick for the actual interest rate charged by financial institutions to those enterprises requiring finance. The actual level of interest charged by financial institutions depends on the level of collateral (security) offered by the enterprise, as well as the risk involved in the transaction as perceived by the financial institution. Lack of access to finance, and an inability on the side of providers of capital to correctly identify the risks involved (which may often be lower than perceived), has long been one of the main criticisms levelled by manufacturers against providers of capital.

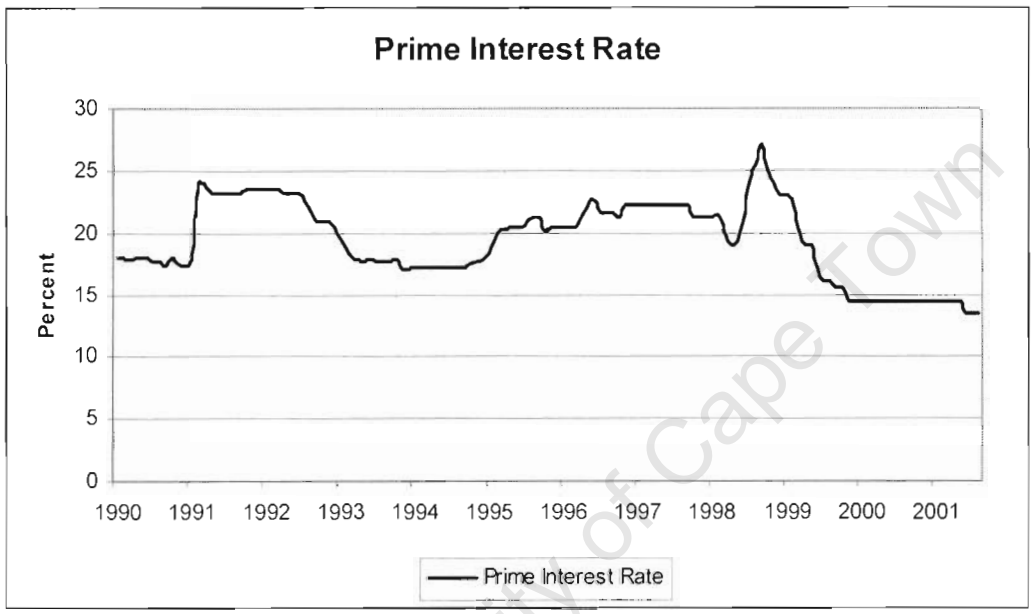

Fig. 10.2 The Prime Interest Rate in South Africa (TSE Database, 2001)

Many firms in the textile industry are small and medium-sized enterprises (SMEs), and are particularly constrained by the high cost of and their limited access to capital. It is widely perceived that SMEs have far greater difficulty in obtaining finance, due to their smaller size and (apparent) lack of collateral to secure such loans. In many cases, financial institution have been unable or unwilling either to measure the true risk of lending to SMEs, or simply uninterested in providing finance due to other considerations. Usually, where finance *has* been provided, this has been at 'punitive' interest rates, making most acquisitions of a capital nature either un-feasible or at best very expensive. While South African manufacturers now have greater access to international capital markets than was the case 10 years ago, the risk involved (in particular the exchange rate risk as has been strongly evident especially in 2001) and high minimum quantitative requirements have resulted in most such options (of obtaining finance abroad) being unfeasible. This general lack of access to capital has, and is still, harming the competitiveness of individual textile manufacturers and the industry as a whole.

An important role could be played in this regard by the South African Department of Trade and Industry (DTI) in partnership with the Textile Federation (Texfed) and the Clothing Federation (Clofed). By facilitating the formation of partnerships and greater co-operation between textile and clothing manufacturers through the sharing of knowledge and experience, a greater success rate may be achieved in focusing on export and niche markets. One of the main constraints faced by manufacturers, especially in trying to enter new markets, is likely to be a lack of effective marketing, as well as perceived high risks in entering new markets. While credit guarantees for export orders are available in the market, a government / Texfed / Clofed joint venture could provide all-important marketing assistance and grants to manufacturers (in the form of low-cost finance and grants for marketing materials, international trade fair stands etc.). These issues have to be looked at if greater participation by local manufacturers in export markets is to be achieved.

This section briefly highlights some of the ancillary supply-side cost factors having an impact on the textile industry, including energy and water costs, raw material costs as well as the cost of capital. Interest rates, which indicate the cost of capital investments, are at relatively high levels vis-à-vis many of South Africa's trade partners, although their levels have recently decreased significantly. As a result, South African firms are at a disadvantage with regard to the cost of capital, a situation exacerbated by the fact that much of the industry's machinery and equipment is imported from abroad. Water and energy costs, which have a significant bearing on the cost of manufacture, have been on a long-term upward trend. Although rising costs will, in this regard, have a negative impact on the industry, these inputs are still at price levels that in many cases are well below the international norm. South Africa should, however, not rely on these to form the basis of competitive advantage, at least not in the long term.

The following section draws attention to the frequently overlooked environmental aspects of textile production, as well as some of South Africa's environmental legislation. Environmental aspects, as will be highlighted later, have the potential of becoming a major competitive disadvantage for South African textile manufacturers, especially with regard to them becoming technical trade barriers.

11. Environmental Aspects of the Textile Industry

11.1 Environmental Aspects of the South African Textile Industry

The textile sector has been identified in previous studies as being the 3rd most polluting industry sector in South African manufacturing, after the mining and chemicals sectors (EMG, 1993). This is largely as a result of two important factors:

Firstly, the majority of textile companies were built many years ago during a time when there was far less concern about the impact they would have on the environment. The general level of environmental awareness amongst consumers - both end-consumers and the clothing industry, was significantly lower than it is today.

Secondly, legislation pertaining to the environment, as well as enforcement thereof, was on a standard far below that of today. Textile companies had relatively lean regulations to adhere to, and where these were breached (and this was noted by the authorities), little if any action was taken against the textile company concerned. The environmental performance of the industry was thus no priority area.

The textile industry makes significant use of natural resources in its various production processes, as well as chemicals and textile dyes. Sometimes only a small portion of these inputs ends up on the final product, and significant amounts land up in the various industry waste streams.

The industry thus has to deal with sludge waste, gaseous emissions and water contamination (the textile industry is a significant user of water, which becomes contaminated with chemicals and the impurities found in fibres). In a previous study, the vast majority of the South African textile enterprises (90%) were found to discharge their effluents to sewers, with approximately 10% discharging effluent into the sea, rivers, irrigation systems and landfills (Gilfillan, 1997). In addition, very little water recycling takes place, and significant amounts of contaminated water are released into municipal sewers (EMG, 1993). This subsequently poses many difficulties and dangers to the biological treatment facilities used by local authorities. Table 11.1 and 11.2 show the typical characteristics of textile industry effluents, also highlighting the fact that the textile industry is also a relatively intensive water-using sector. The pH is generally high, while BOD (Biochemical Oxygen Demand) and TSS (Total Suspended Solids) levels are high enough to place significant strain on the environment (Kothuis and Schelleman, 1995).

Process	Composition	Nature
Sizing	Starch, waxes, carboxymethyl cellulose, polyvinyl alcohol	High in BOD and COD
Desizing	Starch, glucose, carboxymethyl cellulose, polyvinyl alcohol, fats and waxes	High BOD, COD, suspended solids, dissolved solids
Scouring	Caustic soda, waxes, grease, soda ash, sodium silicate, fibres, surfactants, sodium phosphate	Dark coloured, high pH, high BOD, dissolved solids
Bleaching	Hypochlorite, chlorine, caustic soda, hydrogen peroxide, acids, surfactants, sodium silicate, sodium phosphate	Alkaline, suspended solids
Mercerising	Caustic soda	High pH, low BOD, high dissolved solids
Dyeing	Various dyes, mordants, reducing agents, acetic acid, soap	Strongly coloured, high BOD, dissolved solids, low suspended solids, heavy metals
Printing	Pastes, starch, gums, oils, mordants, acids, soaps	Highly coloured, high BOD, oily appearance, suspended solids
Finishing	Inorganic salts, toxic compounds	Slightly alkaline, low BOD

Table 11.1 Effluent Characteristics of the South African Textile Industry (PRG, 1999)

The intensities of the effluent streams of the textile industry relates directly to individual firms' levels of technology, environmental awareness and production strategy followed. These variables are further dependent on a number of variables, including the availability of capital and relevant technology, legislative and consumer pressure, competitiveness of labour and capital inputs, barriers to trade and commodity prices. The following wastewater parameters are, however, typical of the textile industry.

Fibre	Wastewater Parameter			
	BOD (mg/L)	TSS (mg/L)	pH	Water Use (L / 1000 kg of product)
Wool	1.000-10.000	1.000-30.000	9-11	46.000-100.000
Cotton	100-2.900	2.200-17.400	10-13	2.500-43.000
Acetate	2.000	2.000	9-10	25.000-83.500
Nylon	1.300	1.800	9-10	50.000-66.750
Acrylic	2.100	1.800	9-10	50.000-66.750
Polyester	500-800	1.800	8-10	25.000-42.000

Table 11.2 Typical Characteristics of Scouring Wastewater for Select Fibres (Kothuis and Schelleman, 1995)

The inefficient and polluting use of water has many reasons; the most obvious ones are likely to include price considerations such as the low price of water, relatively minor fines for exceeding the pollution limits,

and a lack of policing of the pre-determined guidelines (although this is set to change!). '*Water consumption*' and '*waste generation in the form of highly contaminated aqueous effluent and sludge wastes*' have subsequently been identified as the most critical problems in terms of environmental impact in the textile industry (EMG, 1993).

While not as relevant to the textile industry as it is to other industry sectors (where significant amounts of waste can *not* be 'neutralised' and released into the sewers), it is of interest here to mention a particular problem which is evident in Kwazulu Natal. As of April 2000 no disposal site for hazardous wastes existed in the province (only 2 low-hazardous waste sites), which is effectively encouraging the illegal dumping (Hattingh, 2000). According to legislation, however, it is illegal not only to move hazardous wastes across national borders (e.g. importation and subsequent disposal of hazardous waste), but also to transport it across provincial boundaries. While hazardous waste disposal facilities exist in the Western Cape, Eastern Cape and Gauteng, it is not only technically illegal of KZN firms to dispose of their wastes there, but also very expensive (roughly R 12.000 per cubic metre) (Hattingh, 2000).

Both the industrial activities, in this case the manufacture (and especially dying) of textiles, as well as related disposal services, potentially introduce toxic effluents into the environment. While all heavy metals occur naturally in the environment, most of them become highly toxic as soon as their concentrations reach certain limits. Such excessive amounts rapidly end up as a serious environmental and health hazard, with consequent social and economic implications. The textile industry, especially dye-houses, use a significant amount of sometimes highly concentrated quantities of toxic materials, and often only a small portion of the (chemical) inputs are actually incorporated in the end-product.

There is, however, still a wide gap between the actual and perceived environmental threats of the textile industry. It has been shown that serious threats of pollution exist within many of the textile manufacturing processes, especially where the industrial waste is not treated in accordance to environmental legislation. On the other hand, of the respondents to the survey conducted in the South African textile industry (see Appendix 11), 84% felt that the textile industry did not pose a significant threat to the environment (with 11% being 'uncertain'), although 74% conceded that environmental issues were nonetheless relevant to the industry. Very few companies had been exposed to any environmental pressure (16%), while 5% were 'uncertain'. Environmental pressure, in this case, referred to environmental demands and / or pressure from local government, provincial / national government, suppliers, clients, waste minimisation clubs and consultants. 72% of respondents did also not anticipate environmental pressure from the above in the short to medium term. Of those companies that had been exposed to some kind of pressure, one-third indicated international clients (retail / clothing industry), one-third mentioned waste minimisation clubs, and two-thirds said consultants (multiple answers were possible). Notably, no pressure was confirmed from governing bodies such as municipalities and / or the Government. While this last-mentioned point may

underline the previous non-enforcement of environmental legislation, it is an issue that is likely to intensify in the short to medium term.

11.2 Environmental Legislation

While environmental legislation is, in many cases, adequately "equipped" to cover most environmental issues within the South African manufacturing sector, a lack of enforcement capacity (or, in some cases, lack of political willingness), has in the past made these (environmental) parts of the legislation ineffective at best. Environmental legislation is thus often, as with some parts of the country's labour laws, seen as being ahead of its time in the South African context, especially with respect to the country's past and present manufacturing base and the unemployment situation. According to the textile industry survey (see Appendix 11), only 12% of respondents said that they felt environmental legislation in South Africa was conducive to textile industry growth. 29% of respondents said it was not, while the vast majority (59%) was uncertain. This needs to be seen in context with a later question relating to the environmental impacts of the textile industry, where 74% of the respondents conceded that environmental issues were relevant to the South African textile industry, but only 5% felt that the South African textile industry poses a significant threat to the environment (in those areas that it is situated in).

Large parts of South Africa's environmental standards and legislation are modelled on developed world standards and *best available technology not entailing excessive cost* (BATNEEC), while the enforcement, and consequently awareness and technological standards used in manufacturing enterprises, often lag far behind. Much work has, however, been done in recent years to increase not only awareness of the harmful side-effects of manufacturing sector waste streams, but also the enforcement of these pre-determined limits, as amended form time to time. Manufacturers have been advised to familiarise themselves not only with the legislation pertaining to industrial effluent, but also the legal consequence of breaching these. With the textile industry's status as one of the most polluting industries in South Africa (measure in hazardous waste per unit of output) (EMG, 1993), it is important that textile manufacturers take note. Otherwise, environmental costs (and related penalties as a consequence of non-adherence to environmental legislation) may well become a factor of competitive dis-advantage vis-à-vis the its trading partners and competitors.

On top of this, there has also been a significant paradigm shift away from using the country's natural resources in an unsustainable manner, especially water and to a lesser extent energy. The emphasis has shifted based on the premise that greater resource demand management (using price and price differentiation as the main tool) will be used by the authorities to achieve more environmentally sustainable consumption patterns. Such moves are likely to have an increasing impact on the South African textile industry (and industry in general), which has in the past relied on the provision of water and energy at prices far below their real long-term cost of supply.

Not only from a supply perspective are environmental issues increasingly being incorporated into environmental legislation and pricing. A greater emphasis is being placed on the monitoring and enforcement of pre-determined effluent standards, and transgressors are set to be dealt with severely. Once again a lack of human resources by the authorities has failed to effectively enforce much of the environmental legislation that is already in place; many of these shortcomings are at present being addressed and are likely to lead to a much stricter environmental legislative framework for the South African manufacturing sector. In this regard, the textile industry in particular has been identified as being a significant contributor of industrial waste per Rand value of output produced, and will thus encounter greater monitoring.

Environmental management in South Africa is the responsibility of various government institutions. At national government level, the central policy-formulating and co-ordinating body is the Department of Environmental Affairs and Tourism. Other organisations involved directly or indirectly involved at this level include the departments of Agriculture, Water Affairs and Forestry and Minerals and Energy (GCIS, 2000).

Important pieces of legislation pertaining to amongst others the textile industry have been introduced (or are in the process of being developed) in South Africa. These include the *National Environmental Management Act (NEMA)* of 1998, the *National Waste Management Strategy and Action Plan for South Africa* (NWMS) (1998) by the DEAT and DWAF, and the White Paper on *Integrated Pollution and Waste Management for South Africa* of 2000, also by the DEAT and DWAF.

The key emphasis of the *NEMA* is an overall focus on socially, economically and environmentally sustainable development, and the application of environmental management tools to ensure integrated and harmonised environmental management of activities as envisaged by the regulations (on both national and provincial level). For this purpose the Committee for Environmental Co-ordination was formed. *NEMA* also makes provision for the establishment of a National Environmental Advisory Forum which gives stakeholders and experts the opportunity to advise the Minister of the DEAT on environmental management issues (GCIS, 2000).

The White Paper on Integrated Pollution and Waste Management (IP&WM) is a new approach by the government in relation to pollution and waste management. Its provisions are consistent with "international trends and our national objectives of efficient and effective management of our...resources" (DEAT, 2000). The overall focus of this landmark document is a move away from the traditional "end-of-pipe" treatment approach towards pollution prevention, waste minimisation (and thus pollution at source) and the avoidance of environmental degradation.

The White Paper also seeks to effectively deal with the fragmented nature of South Africa's legislation pertaining to the environment, and the loopholes created due to the wide spread of areas of responsibility. The IP&WM largely focuses on the management of the receiving media air, water and soil (DANCED, 2000).

The provisions of the IP&WM can be broadly summarised as follows:

- The **prevention** and minimisation of waste and pollution at source (i.e. a move away from the traditional end-of-pipe approach)
- Ensuring the **integrity** and sustained 'fitness for use' of all receiving environmental media (i.e. air, water and land)
- The **management** and **minimisation** of the impacts of unavoidable waste from its generation to its disposal (holistic cradle-to-grave approach)
- The **remediation** of any pollution of the environment by holding responsible parties accountable
- The integration of environmental, social, political and development needs among all sectors of society.

It is clear from the discussion in this section that environmental issues are significant in the textile industry. The impact of the textile industry, where it is located, on the environment is potentially significant, while environmental awareness is only slowly starting to catch up. The survey conducted in the South African textile industry found that while 74% of respondents admitted that environmental issues were relevant to the textile industry, 84% felt that the textile industry did *not* pose any significant environmental risk. 79% of respondents noted that they had not been exposed to any environmental pressure, be it from any authorities or clients. However, only a relatively small portion of manufacturers sampled (24%) had achieved international sales (in any significant amount), which in all probability is a strong contributing reason for the low environmental pressure felt by companies. Environmental pressure, both locally (consumers and authorities) and from abroad (international customers), is likely to increasingly 'require' companies to comply with at least minimum environmental standards. This is likely to take on the form of direct pressure (i.e. requests for information from manufacturers, compliance etc.) and indirect pressure (difficulty with market penetration, loss in market share etc.).

This section highlights some of the environmental issues with regard to the manufacture of textiles, as well as some of South Africa's environmental legislation. Environmental issues are likely to become increasingly important in the years ahead, especially in terms of the evidence presented in previous sections that identify export markets as a critically important and feasible (long-term) focus area for the South African textile industry. The following section expands the environmental theme by introducing environment-related (technical) trade barriers, focusing on eco-labelling.

12. Introduction to Eco-Labelling and Options for the Textile Industry

The analysis of the South African textile industry so far has shown that it is increasingly unable to compete at the lower end of the market, and that in many cases the imported price of lower value-added textile products exceeds the local cost of the input materials required for producing similar products. There are many reasons for this, but many appear to be related to a relatively unproductive labour force and outdated manufacturing technology. However, it was shown that exports were increasing, and that significant success was had in penetrating export markets. With the downscaling of tariff barriers, and the negotiations around FTAs, the scene appears to be set for continued success in producing for the export market. There is, however, a major *caveat*: environmental issues are of far greater significance and interest in the developed-country markets than they are in South Africa, and environmental concerns are increasingly having an impact on the purchasing decisions (mainly) of developed countries' consumers. It is possible that the South African textile industry's export performance could be significantly curtailed if tit does not begin focusing on the environmental attributes of the textiles it produces. Eco-labels have been developed in many of South Africa's trading partners that allow their (textile) manufacturers to differentiate their products according to the environmentally preferable attributes such products may embody. There is a legitimate concern that these measures will replace traditional tariff-based barriers, and become new (technical) trade barriers to those countries and industries that do not integrate environmental issues with production and trade. Non-compliance can become a powerful tool used by developed countries to discriminate against developing country manufacturers in obtaining and expanding market access..

12.1 What is Eco-Labelling? Likely Implications and Various Definitions

Eco-labelling (or environmental labelling) is a guide for consumers to choose products and services that are less harmful to the environment (GEN, 1994).

An eco-label is a form of legally protected label that is applied to, or certification awarded to, a product or service warranting that the particular product (or service) complies with certain pre-determined environmental and social criteria. It thus makes a positive statement about the environmental aspects of the product, and comes as a reward for the environmental leadership embodied in the product. As eco-labelling is, in fact, a form of product differentiation, products conforming to and bearing an eco-label are thus likely to receive a premium in their respective markets. There is increasing evidence that consumers in industrialised societies may be willing to pay a higher price for products that are more environmentally friendly than others, particularly if other attributes like quality are at least the same (Vitalis, 2001). This *premium* gives producers an incentive to switch to environmentally-sound production methods, and is thus

an important driver for eco-labelling (Verbruggen, 1995). The credibility of the relevant eco-label, and the market for eco-labelled products, naturally play vitally important roles in the success of an eco-label.

Eco-labels are usually based on a product life cycle approach, whereby the relevant environmental product criteria are developed following analysis of the environmental impact from raw material usage (so-called "cradle") to final end-use and disposal (so-called "grave"). Life Cycle Analysis (LCA) is thus often referred to as the "cradle to grave" approach. A brief overview of the LCA methodology can be found in Appendix 07.

Eco-labels are further characterised by being independent from commercial interests (by being administered by not-for-profit authorities), and they may not discriminate between applicants by only granting access to the labels to certain countries or regions. Eco-labels allow consumers to evaluate the environmental attributes of the products and services they are purchasing (US EPA, 1998). An eco-label therefore assists consumers (including institutions and governments that consume input materials and products) in making environmentally responsible choices in the acquisition of products and services. Eco-labels are intended to bring about environmental benefits through the provision of information and consequently have a positive influence on consumers' purchasing decisions (OECD, 1994).

Environmental labels provide an opportunity to inform consumers about product characteristics that may not be readily apparent (US EPA, 1999). Eco-labels are not directly quality labels; however, for a product to obtain an eco-label, it would have to be manufactured under strictly controlled conditions for it to pass the criteria laid down by the relevant eco-label. For example, as far as textiles are concerned, 'fitness for use' refers to the necessary fastness assessment of the product, for which tests include those for heavy metal content and residues, pH, formaldehyde etc. (Burdett, 1997). Eco-labels present companies with a means of exploring the market for environmentally friendly 'eco-textiles' in a formalised, co-ordinated manner, thereby tapping into this market niche whose growth is rapidly gaining momentum. Eco-labels provide producers with a means of extracting a preference (and possible price premium) in the market place, while informing consumers about the environmental impact of their purchasing decisions (Vitalis, 2001).

There are various important issues that are addressed partially or fully (depending on the relevant scheme) by eco-labelling. These typically deal with the use of raw materials and pesticides, resource use during manufacture, and performance and disposal of the final product.

Important Textile Issues and Eco-Labelling	
1	Use of irreplaceable raw materials
2	Use of agro-chemicals and pesticides
3	Energy, water and chemicals usage during the manufacture and life of the product
4	Packaging
5	Human ecology (Occupational health, fitness for use)
6	Performance criteria
7	Disposal

Table 12.1 Important Issues in Relation to the Eco-labelling of Textiles

Eco-labelling can have various implications on producers and consumers. Some of the implications thereof, such as the possibility of them becoming non-tariff technical trade barriers (TTBs), are discussed later. Following an evaluation of the successes of the eco-labelling schemes operating within the OECD, it was concluded that (OECD, 1997):

- There exists anecdotal evidence which suggests that sales of a product have increased after an eco-label has been obtained;
- Some products with eco-labels have achieved significant success in their market, obtaining up to 30% of the market share within that particular product category. Eco-labels had, in such cases, become the *de facto* standard;
- It was found that the success of eco-labelling schemes was positively and strongly correlated with the environmental awareness of that particular country and / or market;
- The importance and success of eco-labels has increased when linked with government procurement;
- Manufacturers have considered eco-labels to be a valuable tool for purposes of communicating the qualities of their product as well as the firm's concern for the environment.

Various definitions of eco-labelling are used in the international arena, and eco-labelling as a procedure is divided up into a number of components according to type of certification, the nature of the environmental 'claim', whether the label is mandatory or voluntary, and so forth.

The **US EPA** criteria to define eco-labelling programs include the following (US EPA, 1998):

- whether the program relies on **first-party or third-party verification** (i.e. own verification or independent source that awards labels to products and services based on certain environmental criteria)
- positive, negative or neutral labelling programs (where positive programs certify that a product possesses certain **preferable attributes**, neutral programs summarise environmental information about the products, and negative labelling **warns consumers and down-stream manufacturers** about hazardous ingredients contained in the product)
- **voluntary or mandatory schemes** (voluntary typically displaying positive or neutral information, while mandatory programs usually containing 'negative' information)

Eco-labels allow consumers to make comparisons among products bearing such labels. As a direct consequence, consumers can use this information to reduce the environmental impacts of their purchasing activities by acquiring environmentally preferable products. Labels therefore assist consumers to "vote" their preferences in the marketplace and thus potentially shift the market toward products that minimise environmental impacts during their life cycle (US EPA, 1999).

A **United Nations** definition of eco-labelling is somewhat shorter, and describes an eco-label as "a voluntary trademark that is awarded to products deemed to be less harmful to the environment that other products within the same category" (United Nations, date unknown). It goes on to list the two following important implications of this definitions, namely that:

- an eco-label requires **voluntary application** by the producer or the products for which the eco-label is applied for, and will thus only occur where producer can extract "some extra surplus (or avoid loss of surplus) from it".
- an eco-labelling program requires **independent third party certification** to define both product categories and the relevant degree of 'environmental harm' permissible. Inconsistencies and differing requirements between various countries may have a negative impact on international trade by acting as a trade barrier (…)

The **International Organisation for Standardisation** (ISO) has adopted eco-labelling as an important tool in obtaining environmental sustainability of business. It has introduced the ISO 14000 series of environmental standards, with the ISO 14020 series dealing exclusively with environmental labels and declarations. The ISO's technical Committee 207 on Environmental Management is responsible for the development of environmental standards for environmental labelling, amongst others. Its sub-committee 3 (SC3) classifies eco-labels into the following three categories (ISO, 2001; WTO, 1997):

- **Type I** environmental labels, i.e. "*voluntary, multiple criteria-based third-party practitioner programs that awards labels claiming overall environmental preference of a product within a particular product category based on life-cycle considerations*". A Type I label can be awarded to goods and services after application to an accredited certification body, which administers the labelling scheme. Such eco-labels are generally developed on the basis of the life-cycle approach, and its criteria levels are usually set in such a way as to enable only those products that are environmentally superior vis-à-vis the rest of the respective group to meet them (the criteria). The most well-established eco-labelling schemes falling into this category are the *Green Seal* (US), *The Nordic Swan* (Nordic countries), the *EU Flower* (European Union Eco-Label), *Environmental choice* (Canada) and the *Blue Angel* (Germany).

- **Type II** environmental labels are those that "*consist of informative self-declaration claims*", made without independent third-party certification by, for example, "*manufacturers, importers, distributors, retailers or anyone else likely to benefit from them*". The absence of third-party verification is likely to count against wide-spread acceptance of such schemes by consumers.

- **Type III** environmental labels are those relating to "quantified product information labels based upon independent verification using pre-set indices". The ISO technical report 14025, which is the forerunner to the development of an ISO standard, defines Type III declarations as "...quantified environmental data for a product with pre-set categories of parameters based on the ISO 14040 series of standards, but not excluding additional environmental information provided within a Type III environmental programme". While Type III environmental labels are largely similar to Type I label in terms of being voluntary, the main difference is that Type III labels are applicable to all products within a product category, and not just to those select few that are environmentally superior (DANCED, 2000).

Further opinion is obtained from a paper presented at the 5th European Roundtable on Cleaner Production held in Lisbon, which concludes that eco-labels serve the following defining purposes (Almeida *et* al.1998):

- Guarantee the **absence of substances** that can be harmful to human health
- Guarantee that the product has a **reduced environmental impact** on natural resources during its life cycle
- Guarantee that the textile product has been produced in accordance with **occupational health** guidelines, and
- Guarantee the product conforms with certain levels of "functional quality" (**fitness of use**)

12.2 Status of Eco-Labelling World-Wide

The use of eco-labelling schemes has increased significantly since the late, along with an increasing awareness of the environmental impacts that many of the world's (especially) manufacturing industries have1980's (Bagh, 1998, Hyvarinen, 1999, European Union, 2001). There is a growing recognition that, in order to obtain greater access to certain (mainly developed) markets, companies need to demonstrate adherence to sound environmental practices. The growing use of eco-labels world-wide is thus indicative of important changes in social attitudes towards the environment, and part of a much wider move towards the use of market-based instruments (OECD, 1994) for environmental regulation and industrial sustainability.

Eco-labelling schemes have been developed mainly in Europe, North America, the Pacific Rim and South America where demand for products bearing an eco-label, or complying with certain minimum environmental standards, appears to be the greatest. Consumer awareness about the environmental issues involved in the manufacture of products and provision of services seems to be both a cause and effect of the growth in environmental labelling schemes world-wide.

A study covering most significant national or trans-national eco-labelling schemes in the world (see table below), found that there where at least 29 countries, mostly developed ones, that had positive or third-party eco-labelling programs in existence (US EPA, 1998). As described previously, 'positive' programs typically certify that such products possess one or more "environmentally preferable attributes" (US EPA, 1998), while 'third-party' refers to the fact that these schemes are verified by an independent source.

Countries Utilising Eco-Labelling Programmes					
Europe			**Pacific Rim**		
Country	**Programme**	**Number***	**Country**	**Programme**	**Number***
Austria	Austrian Eco-label	150	China	Eco-labelling Program	43
Croatia	Croatia's Environmental Label	15	India	India's Ecomark	1
Czech Republic	Czech Eco-label	198	Indonesia	In Development	n.a.
Denmark	Nordic Swan	350	Japan	Japan's Ecomark	2031
Finland	Nordic Swan	350	Malaysia	Product Certification Program	n.a.
France	NF-Environnement Mark	>300	New Zealand	Environmental Choice	55
Germany	Blue Angel & Green Dot	4135 / n.a	Singapore	Green Label	702
Greece	EU-Eco-labelling Scheme	>300	South Korea	Korea's Ecomark	219
Iceland	Nordic Swan	350	Taiwan	Green Mark Taiwan	102
Italy	EU-Eco-labelling Scheme	>300	Thailand	The Thai Green Label Scheme	N/a
Luxembourg	EU-Eco-labelling Scheme	>300			
Netherlands	Stichting Milieukeur	86	**North & South America**		
Norway	Nordic Swan	350	Brazil	ABNT-Environmental Quality	N/a
Portugal	EU-Eco-labelling Scheme	>300	Canada	Canada's Environmental Choice Program	N/a
Spain	AENOR Medior Ambiente	14	United States	Ecotel	N/a
United kingdom	EU-Eco-labelling Scheme	>300		Energy Guide	N/a
				Scientific Cert. Systems	N/a
				Green Seal	N/a
**** Note: Number refers to the total number of labels awarded under a specific scheme***				Green Star & Energy Star	N/a

Table 12.2 Eco-Labelling Programmes Across the World (US EPA, 1998)

The eco-labelling programs in the above table are mostly national eco-labelling programmes, some of which have specific criteria (and standards) focusing on the textile industry in particular. Other, "private" eco-labelling schemes include the European *Öko-Tex* certification, of which approximately 5.900 certificates have already been awarded, 10% of which are in the developing world (Robins, 1999).

There is a growing acceptance that eco-labelling certification programs are useful as a means of market differentiation (and promoting environmentally sustainable production) by producers, but also a growing realisation by developing countries of the need to conform to such environmental standards in order to gain (or maintain) market share in their export markets.

Table 12.3 lists the most important national eco-labels with their date of creation, showing that while eco-labels have only been in existence for approximately a decade in most countries, they are by now relatively firmly established and widespread.

Overview of Eco-Labelling Programs and their Date of Creation		
Country / Group	**Name of Program**	**Date of Creation**
Germany	Blue Angel	1977
Canada	Environmental Choice Program	1988
Japan	Eco Mark	1989
Nordic Countries	Nordic Swan	1989
United States	Green Seal	1989
Sweden	Good Environmental Choice	1990
India	Ecomark	1991
Austria	Austrian Eco-Label	1991
Australia	Environmental Choice	1991
Rep. of Korea	Ecomark	1992
Singapore	Green Label Singapore	1992
France	NF-Environnement	1992
Netherlands	Stichting Milieukeur	1992
European Union	European Flower	1992
Croatia	Environmentally Friendly	1993
Thailand	Thai Green Label	1994

Table 12.3 Overview of Eco-Labelling Programs and their Date of Creation (ITC, 1996)

12.3 Overview of International Work done Relating to Eco-Labelling

Eco-labelling is a topic that is dealt with simultaneously by a number of international organisations. Besides the research work done by eco-labelling governing bodies and other standard setting authorities, it is also a topic for research and debate amongst a number of international organisations that individually and collectively wield significant and often legally binding influence and authority. A few of these organisations are dealt with here briefly:

12.3.1 The United Nations Environmental Program (UNEP)

The United Nations Environmental Program (UNEP) has identified the importance and significance of eco-labelling at a relatively early stage, and the topic has been discussed extensively by two of its Expert

Group meetings in 1995 and 1996 (WTO, 1997). The meetings held in 1995 addressed a number of criteria relevant to the development and awarding of environmental labels, including:

- How products are selected for coverage by eco-labelling schemes;
- The degree of transparency in the development of ecological criteria for eco-labelling schemes;
- The procedural and institutional issues relevant to the establishment of an eco-labelling scheme, and of mutual recognition thereof.

A paper produced by the WTO (1997) after the second (1996) meeting discusses the following, amongst other issues:

- The specific environmental characteristics of three product groups, namely paper, laundry detergents and textiles;
- Provides a comparison of the ecological criteria applied to certain product categories by different eco-labelling schemes;
- Highlights the major methodological assumptions underlying eco-labelling schemes, looking at life-cycle assessment in particular.

12.3.2 The United Nations Conference on Trade and Development (UNCTAD)

The United Nations Conference on Trade and Development plays an important role internationally in trade-related matters. UNCTAD was established in 1964 as a permanent inter-governmental body, and is the principal organ of the United Nations General Assembly in the field of trade and development. There are currently 190 states that are members of UNCTAD. Its main goals are the maximisation of trade, investment and development opportunities especially of developing countries, and helping them face the challenges presented by the rapid economic globalisation. UNCTAD seeks to help integrate, on an equitable basis, the world's developing countries into the world economy. to help them face challenges arising from globalisation and integrate into the world economy, on an equitable basis. It pursues its goals mainly through research in various international for a, as well as through technical co-operation with member states and intergovernmental dialogue (UNCTAD, 2001).

UNCTAD consists of a number of working groups and sub-committees, including the Ad-Hoc Working Group on Trade, Environment and Development (AHWG), which has examined various aspects of eco-labelling, including its effect on trade (WTO, 1997). According to the same source, the AHWG examined the issue of eco-labelling and market opportunities for environmentally friendly products at the working group's first and second sessions (November 1994 and June 1995). It focused on the following with respect to eco-labelling:

- The comparative analysis of current and planned schemes, with a view to discussing concepts such as mutual recognition and equivalencies
- The examination of possibilities for taking into account the interests of developing countries in the development of eco-labelling criteria

At the AHWG sessions, two UNCTAD reports were focused on, namely "*Eco-labelling and Market Opportunities for Environmentally Friendly Products*" and "*Aspects of Establishing and Operating Eco-Labelling Programs*".

The first report discusses environmentally friendly products and analyses options of defining and certifying such products. Furthermore, the competitiveness aspects of eco-labelling are addressed, in particular the effects on how eco-labelling can adversely affect the export competitiveness of developing countries (and act as a technical trade barrier (TTB). This report identifies the following important issues for developing countries (WTO, 1997; UNCTAD, 2001):

- (Greater) transparency in the development of eco-labelling schemes and their ecological criteria;
- The development of internationally agreed and accepted guidelines for general principles to be adhered to in the development of eco-labelling schemes;
- The encouragement of the mutual recognition of divergent environmental criteria;
- (Increasing) provision of technical assistance and co-operation to developing countries (in establishing and / or conforming with ecological criteria in the production of goods).

The second report, "*Aspects of Establishing and Operating Eco-Labelling Programs*", is an extension of the first report mentioned above, and deals mostly with the effects of eco-labelling on trade and the environment, development issues such as the challenges faced by SMEs in trying to comply with environmental standards, as well as a number of issues pertaining especially to developing countries. UNCTAD has formally stated that it will continue to follow the developments relating to eco-labelling and report on them accordingly (WTO, 1997). This will be done with particular reference to the impact of eco-labelling on trade, environmental and developmental effects on developing countries, as well as issues such as mutual recognition (of eco-labels).

12.3.3 The International Organisation for Standardisation (ISO)

The International Organisation for Standardisation is an international federation of national standard setting bodies from approximately 130 countries (ISO, 2001). It is a non-governmental organisation (NGO) and was established in 1947. According to the ISO's official website *www.iso.ch* (2001), its mission is to

"promote the development of standardisation and related activities in the world with a view to facilitating the international exchange of goods and services, and to developing co-operation in the spheres of intellectual, scientific, technological and economic activity".

The ISO has a number of technical sub-committees that deal with the various aspects of standard setting and development research. The development of environmental standards is the responsibility of ISO's Technical Committee 207, which deals with the following topics:

(a) Environmental Auditing and Related Environmental Investigations
(b) Environmental Labelling
(c) Environmental Performance Evaluation
(d) Life Cycle Assessment
(e) Terms and Definitions relating to Environmental Aspects

ISO classifies eco-labelling into three categories (see Section 12.1), namely Type I labels (voluntary labels that are awarded to environmentally preferable products and are certified by independent third parties), Type II labels (informative self-declaration claims) and Type III labels (quantified product information labels based on independent verification using pre-set indices). The main difference between Type I and Type III labels is the fact that Type I labels only apply to the superior environmental performance within a product group (ISO, 2001).

ISO has developed international standards for eco-labelling and published them under the ISO 14000 environmental series. These include (WTO, 1997):

ISO 14020	Environmental declarations – Basic Principles
ISO 14021	Environmental Labels and Declarations – Self Declaration Claims – Terms and Definitions
ISO 14022	Environmental Labels and Declarations – Self Declaration Environmental Claims – Environmental Labelling Symbols
ISO 14023	Environmental Labels and Declarations – Self Declaration Environmental Claims – Testing and Verification Methodologies
ISO 14024	Environmental Labels and Declarations – Environmental Labelling Type I – Guiding Principles and Procedures

Standards have also been developed for Life Cycle Analysis (LCA), which forms the basis for most eco-labels. These fall under the following sections (within ISO 14000):

ISO 14040	Environmental Management – Life Cycle Assessment - Principles and Guidelines
ISO 14041	Environmental Management – Life Cycle Assessment – Inventory and Analysis

ISO 14042	Environmental Management – Life Cycle Assessment – Life Cycle Impact Assessment
ISO 14043	Environmental Management – Life Cycle Assessment – Life Cycle Improvement Assessment

12.3.4 The International Trade Centre (ITC)

The International Trade Centre (ITC) is a technical co-operation organisation based in Geneva, Switzerland, that deals with the operational aspects of trade promotion and export development (ITC, 2001). It complements the research, policy, deliberative and normative work of its parent bodies, the World Trade Organisation (WTO, formerly GATT) and the United Nations Conference on Trade and Development (UNCTAD). The ITC's main role is to build national capacities for improving the trade performance of business, with a particular focus on SMEs. Textiles are one of the main focus areas where the ITC seeks to subject-specific technical assistance (WTO, 2001). The object of the textile program is to create greater (in particular *environmental*) awareness within the textile industry, especially in that of developing countries, of the need to use the transition period before the phasing out of textile quotas and subsidies to increase competitiveness, notably by "addressing environmental concerns" (ITC, 2001). According to the ITC (2001), over 2800 industry leaders benefited from its regional and national workshops over the past 5 years.

The ITC is actively trying to align its activities with the work done by the WTO's Committee on Trade and Environment (CTE) on the topic of eco-labelling (WTO, 1997). It has been actively dealing with the topic of eco-labelling at least since 1995, when it organised a workshop on eco-labelling in the textiles and clothing sectors. In 1996 it produced a document entitled "Eco-Labelling and Other Environmental Quality Requirements in Textiles and Clothing - Implications for Developing Countries", which contains various research articles from the previous year's workshop on eco-labelling. It complements a previous ITC publication entitled "Textiles and Clothing: An Introduction to Quality Requirements in Selected Markets" (WTO, 1997).

The object of the ITC's work in eco-labelling, in particular its workshops on this topic, is to increase awareness, especially among developing countries, of the environmental quality requirements that are increasingly being introduced in the textiles and clothing sectors (amongst others), as well as to help facilitate the exchange of information between the various industries.

12.3.5 The United States Environmental Protection Agency (US EPA)

The Environmental Protection Agency (EPA) has been active over a number of years in research relating to environmental issues and commerce, its interaction, and effects of environmental issues on business decisions. It undertook the "Consumer Labeling Initiative" (CLI) at the start of 1996 with the stated goal of fostering pollution prevention, empowering consumer choice, and improving consumer understanding of safe use, environmental and health information on household consumer labels (US EPA, 1996). This research, while dealing with labelling, mainly looked at household product groups such as pesticides and cleaners. In 1998, the EPA followed this work with a major research initiative dealing with eco-labelling, entitled "Environmental Labeling: Issues, Policies and Practices Worldwide" (US EPA, 1998). Included in this report is an analysis of environmental labelling programs world-wide, their goals, program methodology, stakeholder analysis and eco-labelling trends, albeit largely from a US perspective. The research forms part of the EPA's "overall effort to educate and inform product users about the environmental attributes and consequences of products they purchase" (US EPA, 1998). The EPA is directly involved with approximately 15 labelling programs (ranging from warning labels [toxins] to the development of standards), and is also in contact with almost all environmental labelling programs world-wide, as well as the International Organisation for Standardisation (ISO).

12.4 Eco-Labelling: A Non-Tariff Technical Trade Barrier?

The international community, during the 1992 United Nations environment conference held in Rio de Janeiro, reached widespread consensus that trade, development and environmental protection are compatible and not mutually exclusive. It has also been shown that each activity is dependent on the other two, and inextricably linked in their goals as follows (Verbruggen *et al,* 1995):

- **Trade** is needed for a more efficient allocation of resources, including environmental resources, and is a key instrument for achieving development;
- **Development** is needed to reduce poverty and to raise resources needed for protecting the environment;
- **Environmental** protection is needed to preserve and develop natural resources that are essential for the long-term expansion of trade and sustainable economic growth.

Some concerns have been raised by various international institutions, as well as by many (especially) developing countries, that eco-labelling, while professing to be environmentally beneficial, is in fact having a negative impact on global trade patterns. This is due to the fact that demands for eco-labelled products in a particular host country or region may preclude those countries and industries where eco-labels are not in existence (or whose existence is not widespread) from successfully penetrating such markets.

To many developing countries, the current debate involving eco-labelling represents another form of industrialised countries blocking out developing country exports. Developing countries fear that stricter product standards relating to environmental criteria are increasingly being used as a trade barrier for their exports, and that these environment-based restrictions are "used as an indirect means of protecting northern industries" (Verbruggen *et al.*, 1995). As a consequence, the relative lack of marketing power that developing countries wield in the markets of their developed counterparts has made the former highly vulnerable to changing market conditions.

As eco-labelling is far more widespread in developed countries, demands for such would place a heavy burden on developing countries where eco-labels are generally not in use. In other words, while eco-labels may have the benefit of improving the exchange of information pertaining to the particular product(s), they may impose a disproportionately greater cost on producers from developed countries. These costs include not only the direct costs of compliance, but also the indirect costs associated with restricted market access.

A number of factors may have discriminatory effects on foreign producers, and may pose difficulties for foreign producers obtaining an eco-label for the market (or country) that they are producing for, or may wish to export to in future. A number of important factors impacting particularly on developing countries are listed below (ITC, 1996):

- Eco-labelling is usually based on the domestic environmental priorities and technologies of the importing country (i.e. where the eco-label was developed), and may overlook the relevant and acceptable methods of production in the exporting country;

- The determination of product categories may favour domestic producers over foreign producers, leading to foreign producers having to meet criteria that are largely irrelevant in the 'home' country;

- Eco-labelling criteria may be tailored around an existing stock of technology, which developing countries do not have easy access to; developing country producers may have to incur a disproportionately large cost burden to adjust to the eco-labelling requirements;

- Differentials in environmental infrastructure (e.g. waste treatment plants) may place a higher burden on developing countries in terms of environmental standards and compliance;

- Suppliers of environmentally friendly (or less hazardous) input materials may be more difficult to source from within developing countries where the environmental concerns are different to those in developed countries.

One argument is that the voluntary nature of most eco-labelling schemes means that (eco-labelling) does not create barriers to trade; also, foreign and EU producers may sell products within the EU markets that do not have an eco-label (Loprieno, 1997). The reality of the situation is, however, that it is pressure along the downstream procurement chain which in effect increasingly discriminates against non-complying manufacturers and their products. Integrated supply chain management is more difficult to achieve in developing countries, both due to lack of awareness as well as logistical reasons. Eco-labels can become barriers to trade, and are likely to be increasingly used as a guise for protectionism. Developed countries may attempt to protect their markets from developing country imports by establishing and (in effect) imposing criteria on the environmental information on labels that many of the smaller (usually developing country) producers will find difficult to meet, mainly in relation to production and procedural compliance.

There are many complex issues relating to trade and the environment, including but not limited to the environmental effects of trade liberalisation, requirements and voluntary environmental agreements as well as instruments of environmental policy (such as eco-labelling schemes), the effect of environmental protection on international competitiveness, the effect of trade on product standards, and "green subsidies" (Wright, 1996).

The WTO's Committee on Trade and Environment (CTE) has brought environmental and sustainable development issues into the mainstream of the WTO's work (WTO, 1999). It also seeks to build a constructive relationship between trade and environmental issues. Its key requirement is that "environmental measures that incorporate trade provisions or that affect trade significantly do not discriminate between home-produced goods and imports, nor between imports from or exports to different trading partners" (WTO, 1996). This is due to the fact that non-discrimination, in whatever form, is the cornerstone of secure and predictable market access and undistorted competition, which in turn guarantees consumer choice and gives producers access to the full range of market opportunities. The report (WT/CTE/1) by the WTO (1996) outlines its stance on eco-labelling: It sees eco-labels as important environmental policy instruments, and acknowledges that well-designed eco-labelling programs can be effective instruments of environmental policy. Other than that, there are virtually no further WTO restrictions regarding constraints on policy choices available to individual countries, and on their right to protect their trading environment from production or consumption of either domestically produced or imported products.

The WTO has clearly defined regulations regarding trade barriers, as contained in its TTB agreement. It applies to all WTO members, and covers rules on standards, technical regulations and test and certification systems that need to be adhered to (Wright, 1996).

Contravention of these rules leads to the TTB agreement becoming applicable. While most barriers to trade (including tariffs and many subsidies) are against WTO regulations, eco-labelling schemes are generally ***voluntary*** in nature and thus ***do not*** fall within the WTO rules which disallow trade-restricting practices. However, especially in the light of the ecological criteria for many eco-labels (such as the EU eco-label, which is of particular interest to South African manufacturers) being based on a Life Cycle Analysis (LCA) approach (see Appendix 07), there is a potential of TTBs arising. LCA (also called the 'cradle to grave' approach) is based on an analysis of the entire life cycle of a product – from raw material extraction (i.e. input materials of the textile industry) to the final disposal of a product. Standards for material use and content of the product are drawn up and are used as a basis for the LCA approach. A problem with this is that the standards are usually applicable to a certain country or region only, and be of little relevance in other (often less developed) countries where environmental and resource pressures are of an entirely different magnitude and form. In addition, LCA requires a large amount of information, which may cause practical problems, especially where some of a product's input materials are imported (ITC, 1996). In the absence of, or lack of adherence to, *international* and widely accepted methodologies or standards concerning LCA, developed with wide consultation among all stakeholders, there is a strong possibility that the LCA approach may create trade barriers. One of the reasons for this is that there may be significant adjustment costs for some countries whose industries supply products and services to external markets (Wright, 1996). There is concern that, while the criteria for granting eco-labels do not discriminate directly between domestic and foreign producers, the reality of the situation is that eco-labelling may de facto discriminate against foreign producers, particularly from developing countries (ITC, 1996).

This is notwithstanding the fact that the International Organisation for Standardisation (ISO) has a technical subcommittee (207) dealing with environmental issues that deals with standards for LCAs. It should be noted here that the term "trade barrier" is used here largely to refer to situations whereby products failed to successfully compete in international markets due to (mostly) environmental reasons. These barriers can be consumer-driven or refer to the formal and institutionalised denial of market access. In most cases institutions and companies in developing countries have little recourse to international trade agreements and international trade bodies.

As a result they are left with little choice but to accept eco-labelling as a potentially significant trade barrier, and to adapt accordingly to maintain and gain greater export market penetration.

In South Africa's case, most of the country's exports are destined for developed countries, where environmental (and quality) concerns are far more widespread than domestically, or in other developing countries. To achieve success in export markets, South African companies need to have a competitive advantage in the production of such (export) goods.

This means that they either have to be able to produce certain goods at a lower price than that at which they are available in such (export) markets, or they need to produce comparable products at the same price but having attributes (such as quality, environmental considerations) that exceed those of competing products. Either way, it is important to produce according to what the market wants, rather than 'dictating' to the market.

With reference to the eco-labelling of products, the situation is similar. Notwithstanding the fact that (export) consumer demands for 'cleaner' products (or those possessing some other beneficial attributes) may be an impediment to trade, and notwithstanding the fact that such demands may shift a disproportionally large burden to producers from developing countries, the greatest success will be had by those producers managing to adapt to the demands of the developed world. If South African producers want to succeed in increasing their penetration of export market, they should rely less on competitive advantages brought about by domestic currency weaknesses or multilateral trade agreements, but should instead produce what the export market really wants. As the textiles and clothing industries are subject to international demand fluctuations and trends relating to material usage, colours and other fashion issues, these need to be accounted for, not singularly but in 'partnership' with other less obvious issues such as environmental and social considerations. However, and of no less importance, is the fact that while the above-mentioned (fashion trend) issues may initially be of primary importance, it is the environmental issues that will increasingly provide manufacturers with a sustainable competitive advantage. This means that, especially in the case of developing countries such as South Africa, environmental concerns and pressure originating from developed countries should be anticipated, and relevant responses in the form of new or modified manufacturing and trade strategies formally embraced.

Environmental laws and demands are known to be generally far stricter in developed countries than in developing countries, - a fact that is often perceived as providing developing nations with an unfair advantage *vis-à-vis* their developed counterparts. While the original GATT and now WTO rules are leading to a down-scaling of many direct impediments to trade (mainly tariff barriers and subsidies), developed countries are increasingly resorting to other (non-tariff) barriers to protect their markets, such as eco-labelling. These largely escape censure by organisations such as the WTO due to their voluntary nature, but are nonetheless an impediment to trade that will increasingly restrict access to these markets non-complying manufacturers and suppliers of services. It is clear that eco-labels, while unlikely to be officially classified as technical trade barriers (TTBs) by the World's governing trade, will increasingly become an impediment to trade. Unofficially, therefore, they can be seen as trade barriers, even if the reason for such classification are often market pressure, as opposed to official institutional restrictions.

12.5 Eco-Labelling Options for the Textile Industry

Textile and clothing manufacturers are faced with a number of options when considering formalising environmental compliance of their manufacturing processes and products. These options include obtaining a formal eco-label, compliance with certain environmental criteria which are consistent with established schemes without obtaining formal certification. Only the first, formal, compliance option is dealt with here.

While compliance with certain requirements pertaining to well-established eco-labelling schemes may have its own merits (such as complying with regulations pertaining to the non-use of azo-dyes which are banned in large parts of Europe and form an integral part of the Öko-Tex eco-label), it is the *awareness* and *marketing* factor of well-known (formally certified) schemes that would be one of the greatest drivers for its implementation. This section thus looks specifically at two of the most well-known eco-labelling schemes (relevant to the textile industry) that are of considerable interest to the South African textile industry, namely the Öko-Tex 100 and EU Flower eco-labelling scheme. They have been chosen mainly for four reasons: one is a private scheme (Öko-Tex 100) while the other a government promoted scheme (EU eco-label); both eco-labelling schemes have well developed criteria for textiles; these eco-labelling schemes are growing significantly in importance in the South African textile industry's traditional export markets and they have already been introduced or investigated to a limited extent in South Africa.

12.5.1 Öko-Tex Standard 100 Eco-Labelling Scheme

The Öko-Tex scheme is probably the most important textile product related eco-labelling scheme available to the South African textile industry. It is also one of the oldest and most widely distributed textile industry eco-labelling schemes. Manufacturers and importers of yarn, fabrics or final products may apply for the label. Öko-Tex eco-labels are issued by the "International Association for Research and Testing in the Field of Textile Ecology", which was founded by the German Hohenstein Institute and the Austrian Institute for Textile Research (EM Centre, 2001). While originating in Germany and Austria, the Öko-Tex Standard 100 was developed by fourteen of Europe's leading Textile Research Institutes. In the first 5 years since its introduction, the Öko-Tex 100 label has become the most widely accepted and respected textile eco-label in Europe. Approximately 5.900 certificates have already been awarded, 10% of which are in the developing world (Robins, 1999) (at least 3 have been awarded to South African companies). The success of the Öko-Tex scheme can be largely attributed to strong consumer demand that originally initiated the label, as well as subsequent marketing efforts by the founding members (Stranskaya-Gardiner, 1999).

The main objective of Öko-Tex is to guarantee that textiles do not contain hazardous substances in amounts that could be detrimental to human health within normal conditions of use. As a diverse range of chemicals can be and often is used in the manufacture of textiles, consumers are becoming increasingly aware of the potential health implications, especially as some of these chemicals are either hazardous, or *suspected* of

being hazardous to human health. For example, the use during the various stages of textile production of pesticides, pentachlorophenol, formaldehyde, heavy metals, solvents and certain dyestuffs, amongst others, may lead to the possible absorption into the human body of the residual chemicals. As a result, some countries (notably Germany) have already banned the use of certain chemicals and azo-dyes, and it is likely that the other members of the European Union will follow this example. It is only a matter of time until internal and external environmental legislation will become consistent among member states, shutting the door to textile exports not conforming to these standards. The Öko-Tex scheme, being a laboratory-certified program, ensures that no substances considered to be dangerous to human health are present in the textile or garment that has been duly certified. The Öko-Tex scheme thus provides the assurance both to the end-consumer that the textile product or garment is free of substances hazardous to human health, as well as satisfying the legal requirements of exporting to (or producing within) Germany. Bearing in mind the increasing levels of consistency in EU environmental regulations and legislation, non-compliance with the provisions of the Öko-Tex label may soon become a significant technical trade barrier (TTB).

Appendix 08 provides a list of minimum technical requirements relating to chemicals and other substances of the Öko-Tex schemes. Öko-Tex standards fall into 4 categories, depending on the product type, with certain criteria being stricter in certain product classes (e.g. baby clothing). The different classes can be found in Table 12.4

Öko-Tex Product-Specific Standards	
Product Class I	**Products for baby clothing** - All articles, basic materials and accessories which are provided for the production of articles for babies and children up to 2 years old
Product Class II	**Products with direct skin contact** - Articles worn with a large part of their surface in direct contact with the skin, e.g. blouses, shirts, underwear.
Product Class III	**Products *not* having direct skin contact** - Articles worn with only a small part of their surface in direct contact with the skin, e.g. linings, trousers, jackets.
Product Class IV	**Decoration Material** - Articles including products and accessories which are used for decoration, such as tablecloths, furnishing fabrics, curtains and floor coverings.

Table 12.4 Specific Öko-Tex Product Standards (Burdett, 1997)

Notwithstanding the obvious importance and benefits of obtaining Öko-Tex certification, South African textile and clothing companies are significantly lagging behind their counterparts in other countries. Only three companies have obtained Öko-Tex certification locally, or at least through the CSIR / BTTG

(Chapple, 2001). These are *Gubb & Inggs* (Wool, mohair), *Coats S.A.* (Threads) and *Eagle Ottawa* (Leather). *Team Puma*, a Cape based producer of weft-knitted fabric and part of the Avtex group, has also obtained Öko-Tex certification (*personal observation*). The Öko-Tex scheme has been administered in Southern Africa since 1996 by the CSIR's Textile Technology (Textek) in partnership with the British Textile Technology Group (BTTG). BTTG is Europe's largest independent textile technology organisation providing a wide range of services

The CSIR has achieved associate laboratory status in this regard, bringing the scheme within (relatively) easy reach of Southern African textile and clothing companies (Stranskaya-Gardiner, 1999). Notably, according to Chapple (2001), there are also 3 Zimbabwean and 1 Swaziland companies that are certified to Öko-Tex standards, which is notwithstanding those industries' inferiority (in terms of size and technology) in relation to the South African textile industry.

In order to obtain the Öko-Tex certification, a formal application procedure needs to be adhered to (EM Centre, 2001). Firstly, the prospective procedures and an estimate of costs are discussed during a personal meeting with the official in charge from the certifying institute. Where applicants (i.e. the company applying for Öko-Tex certification) use pre-certified products as input materials from their suppliers, these are taken into account by being recognised as complying with the Öko-Tex criteria. The applicant must then provide representative manufactured samples of the product to be certified for test purposes, add detailed production information and grant their correctness. The samples are tested by the institute to which the application for certification or extension of the certificate was made (in South Africa's case the CSIR in partnership with the BTTG (U.K.). Product groups may be formed by the applicant company so that similar products only have to undergo those tests that refer to differences in material or employed techniques.

Costs involved with Öko-Tex Certification

The **costs** involved with obtaining Öko-Tex certification are determined centrally by the Öko-Tex executive, and are originally specified in Deutsche Marks (and then converted) (Stranskaya-Gardiner, 1999). This is to ensure consistency in the pricing of Öko-Tex certification around the world. In addition to the annual license fee, the total costs of the certification process depend on the analyses to be carried out by the certification institute.

According to one source, companies can expect to pay between 600 and 2.500 pounds sterling for testing the company's products (Gardiner (2001). Experience at the CSIR shows that manufacturers (i.e. CSIR clients) were charged between R900 and R11.000, depending on the complexity of the testing process involved (Chapple, 2001). The cost of the actual Öko-Tex certification (excluding the cost of any testing that may be required), for example, is approximately 500 pounds sterling. The company obtaining Öko-Tex

certification must grant constant quality within the whole production series by implementing a quality assurance system. The founding institute or its agents (i.e. the CSIR's Textile Technology division) takes random tests on sales products twice a year. These tests serve not only serve to show manufacturing consistency and adherence to the environmental specifications of Öko-Tex, but also sustain and build the world-wide respect for and appreciation of the label. If two tests show deviations, the Öko-Tex mark may be withdrawn, and the institute may publish the withdrawal of authorisations in a suitable form (Stranskaya-Gardiner, 1999).

12.5.2 The EU Flower Eco-Labelling Scheme

In response to consumer demand, and as a means of facilitating consumer choice, the European Union (EU) decided to set up common guidelines for environmentally preferable products. The EU's official eco-labelling policy was launched in March 1992, being based on the product's impact on the environment during its entire life cycle (Burdett, 1997). The aim of the EU Eco-label is to promote the design, production, marketing and use of products which have a reduced impact during their entire life cycle (European Union, 2001), as well as providing consumers with better information on the environmental impact of the product (Burdett, 1997). In other words, the aims of the EU eco-label are:

- **To promote the design and production, as well as the marketing and use of products which have a reduced environmental impact during their entire life cycle;**

- **To provide consumers with better information on the environmental impact of products, without compromising product or workers' safety, or significantly affecting a product's fitness for use.**

The EU eco-label is **voluntary,** and it is therefore up to the manufacturers to apply for the eco-label on their products. Due to increasing consumer awareness to environmental issues, the incentive for manufacturers to use the Eco-Labels is great, and increasing. The voluntary nature of most eco-labels is an important criteria with respect to WTO regulations which prohibit most restrictive trade practices.

Many eco-labels that are in existence have no credentials whatsoever, only the interest of the respective retailers and / or industry to market their products (Taschner, 1997). There has been a general absence of independent third party verification and little or no guarantee of ecological advantages amongst the many eco-labelling schemes 'on the market'.

While it was initially only possible to obtain an EU eco-label if one was a manufacturer in one of the EU member states, it is now possible for third countries to fulfil the criteria as well. This means that countries including South Africa are now allowed, if not encouraged, to obtain the EU eco-label by complying with

the necessary criteria. It is likely that the exclusion of non EU countries from obtaining this environmental certification would have been in conflict with GATT / WTO regulations, which prohibits such impediments to free trade and frowns upon technical trade barriers of any kind.

The EU eco-labelling scheme applies to a wide variety of product groups. These include textiles, footwear, paints and varnishes, computers, refrigerators, - a total of 15 generic product groups. A further 12 product groups are under development as of November 1999 (European Union, 2001). Criteria for a product group are developed by the application of a life cycle assessment (LCA), in order to to gauge the impact on the environment at every stage of the product's life cycle, in other words: from cradle to grave. This entails a review of every significant step along the product's life stage, from raw materials, through the various manufacturing processes, distribution and consumer use, to the product's final disposal. Criteria for textiles were only included in comprehensive detail on 17 February 1999, after initially having been drawn up only for T-shirts and bed linen (during the EU eco-labels exploratory and experimental phase). The formal **textile products** category now includes (EU Commission, 1999):

- **Textile clothing**: clothing consisting at least 90% by weight of textile fibres;
- **Interior textiles**: textile products for indoor use, consisting at least 90% by weight of textile fibres, and excluding floor coverings;
- **Yarn and fabric**, for use in textile clothing or interior textiles.

Judging by the number of companies that have obtained the EU eco-label for textile articles, the textile products category is one of the most important and prominent. Of the 75 companies having obtained the EU eco-label (representing a total of over 300 products) as of May 2001, 29 companies are from the textile industry. This compares favourably with the largest product group for which companies have qualified (indoor paints and varnishes) for which 30 companies have obtained the EU eco-label certification. The European textile companies that have obtained the EU Eco-label for textiles are located in a number of different countries, including France, Denmark, Italy, Spain, Germany and Sweden. It would appear that at this stage no non-European firms have yet obtained this eco-label, although they are legally entitled to do so if they fulfil the applicable criteria. The following applies to non-European firms (European Union, 2001):

- *If the (company's) product originates outside of the European Community, eg. if (the company is) a manufacturer in a developing country or one of the candidate countries, (it) may present (its) application to a Competent Body in any one of the Member States in which (its) product is to be or has been placed on the market. (It) therefore (has) some choice about which Competent Body to contact unless (its) product is only marketed in one country (content between brackets added).*

As there is no EU eco-labelling representative in South Africa, the authority verifying that the product complies with the criteria and the application conforms with the assessment and verification requirements is the Competent Body (Buchbinder, 2001). The Competent Body is then obliged to verify this information. The Competent Body is also required to undertake the necessary investigations to monitor on-going compliance with the criteria by holders of an EU eco-label. Buchbinder (2001) further states that the relevant Competent Body will support and advise the applicant with the procedures that are necessary, and will provide the applicant with the necessary forms and information on the necessary test results that need to be provided and how the testing should be carried out.

Companies wishing to obtain the EU eco-label must meet a host of product and process requirements. After conforming with these requirements, the participating company may present its application with all supporting documentation to the Competent Body of its choice (see above). The EU eco-label certifies that the product or product group, for which it has been obtained, has the following characteristics (EU, 2001):

- Reduced water and air pollution during fibre production
- Limited use of substances that are harmful to the environment and in particular to the aquatic environment and health
- Guarantee of shrink resistance during washing and drying
- Guarantee of colour resistance to perspiration, washing, wet and dry rubbing and light exposure

The above characteristics, called the 'ecological criteria' of the EU scheme, are subject to revision every few years. In the *textile products* category, these are subject to revision every 3 years, while some other product categories have criteria that are valid for up to 5 years. In the case of textiles, the criteria of this product group are subject to revision in March 2002 (3 years after their initial introduction). However, before changing the criteria, the EU eco-labelling commission has to give adequate notice of its intention, and stipulate what changes it wishes to introduce (or amend) to the existing set of ecological criteria. A detailed overview of the ecological criteria can be found in Appendix 09. The applicable categories within these ecological criteria are briefly outlined in the table 12.5 (EU Commission, 1999). The criteria are divided into three main categories, concerning textile fibres and processes, chemicals and fitness of use.

Categories dealt with as part of the Ecological Criteria for Textile Products under EU Eco-Labelling
Textile Fibres
▪ Acrylic (residuals of acrylonitrile)
▪ Cotton (residuals of various substances)
▪ Elastane (content of zinc)
▪ Flax and other bast fibres (not obtained by water retting subject to conditions)
▪ Greasy wool and other keratin fibres (including wool from sheep, camel, alpaca, goat) (residuals of various substances)
▪ Man-made cellulose fibres (including viscose, lyocell, acetate) (maximum levels of AOX)
▪ Polyamide (limits to N_2O emissions)
▪ Polyester (limits to antimony in fibres and VOCs)
▪ Polypropylene (no lead-based pigment)
Chemicals
▪ Carding and Spinning oils, waxes, finishes, lubricants and sizeing applied to fibres or yarns) (bio-degradeability)
▪ TCP and PCP (non-use of tetrachlorophenol and pentachlorophenol)
▪ Stripping or de-pigmentation (no heavy metal salts or formaldehyde)
▪ Weighting (non-use of cerium compounds)
▪ Detergents, fabric softeners and complexing agents (bio-degradeability and limits to certain residues)
▪ Bleaching agents (relating to wool, linen and bast fibres, cotton) (limits to AOX emissions)
▪ Impurities in dyes (limits)
▪ Impurities in pigments (limits)
▪ Chrome mordant dyeing (limitations)
▪ Metal complex dyes (limitations to discharge to waste water)
▪ Azo-dyes (prohibition of various dyes with certain characteristics) (non-use of carxynogenic dyes)
▪ Potentially sensitive dyes (limitation of application of use)
▪ Halogenated carriers (non-use)
▪ Printing (limits to VOCs)
▪ Formaldehyde (limitations to use)
▪ Waste water discharge from wet-processing (relating to pH, COD etc.)
▪ Flamer retardants (limitations on chemicals used)
▪ Shrink resistant finishes (halogenated shrink resist substances only to be applied to wool slivers)
Fitness for Use
▪ Dimensional chenges during washing and drying (limitations)
▪ Colour fastness to washing, perspiration, wet rubbing, dry rubbing, light (minimum levels)

Table 12.5 EU Eco-labelling Ecological Criteria Categories (EU Commission, 1999)

Once a company (the 'applicant') has met all the necessary requirements pertaining to the product (category) for which it is applying for an EU eco-label, and after acceptance by the EU competent

authority, the applicant is required to enter into a contract with the competent body. This contract outlines the rights and obligations pertaining to the use of the EU eco-label, including such issues as using the EU eco-label for marketing purposes, statements regarding the EU label etc.

Costs involved with obtaining the EU eco-label

As with all voluntary eco-labelling schemes, there are certain costs involved with obtaining formal certification. While the EU eco-labelling scheme is unlikely to be entirely self-funding (being a multinational scheme), it nonetheless requires funding for its activities, not least of which are the promotion of the EU eco-label in various forms and fora. Public education and awareness are an integral part of any eco-labelling scheme, and to a great measure contribute to the success and acceptance of such schemes.

The EU eco-labelling board is, in its own words, "convinced that the new fee structure which it has introduced is attractive to all interested parties" (European Union, 2001). It is based on an application fee (i.e. to obtain the relevant EU eco-label), and an annual fee (renewal, and sales volume based). A number of fee reductions are offered for applicant companies from developing countries, as well as where the company falls within the SME (small and medium enterprise) definition, and where a company has previously obtained a relevant ISO certification (i.e. ISO 14001). It should be noted that testing costs are not covered by the official fees, and have to be met by the applicant (firm). The official fee structure is as follows:

Overview of the EU Eco-label Fee Structure		
Purpose	**Cost**	**Reductions Possible**
Application Fee	**500 EURO** (≈ R4.000)	Less **25%** for SMEs Less **25%** if from Developing Countries (cumulative)
Annual Fee	**0.15%** of annual volume of sales (at ex-factory prices) (minimum 500 EURO, maximum 25.000 EURO)	Less **25%** for SMEs Less **25%** if from Developing Countries (cumulative) Less **15%** for EMAS / ISO certified companies (cumulative reduction limit: less 50%)

Table 12.6 Overview of the EU Eco-Label Fee Structure (EU Commission, 1999)

Together with the reductions, the application fee would merely be in the region of 125 EURO (approximately R900) for SMEs from Developing Countries, such as South Africa. The annual renewal fee, based on a hypothetical sales volume of R 1 Million for the applicable product for which the EU eco-label may have been obtained, would be R 1.500 per annum. This clearly shows that the direct application and licensing fees are well within reach even for small companies, and should be a small overall cost

consideration for the company. However, as mentioned previously and discussed in Section 13.8 (*Barriers and Drivers to Growing Implementation of Eco-labelling in South Africa*), the costs of compliance with the relevant criteria may far outweigh the direct costs of formal certification. These compliance costs include not only the costs incurred through testing product samples via a recognised testing laboratory, but also the (possible) costs of modifying products and / or processes in order to conform with the requirements, as well as administrative costs.

While the costs associated with compliance with eco-labelling are usually often seen to be a barrier that is too difficult to overcome, care should be taken to see this costs within their full context. Compliance costs should be compared to the potential benefits of being able to pre-empt increased environmental market pressure, greater compliance with both domestic and foreign environmental legislation (current and future), benefits resulting from the in-depth self-analysis of the company`s products and processes (information benefits), as well as new opportunities in export and niche markets (considering presently low environmental awareness from South African consumers). Also, all successful applicants (i.e. companies having obtained an EU eco-label) are promoted by the EU Eco-labelling board, their details and qualifying products published on the EU eco-label's internet web site (European Union, 2000). Herein lies perhaps one of the label`s greatest, but least obvious, benefits. This would be especially true for developed countries such as South African companies, who would obtain a clear **comparative advantage** in a field where competition is great.

This section introduces the concept of eco-labelling, noting the different recognised types of eco-labels. It provides a brief history of the development of eco-labelling, and provides and overview of the work done in various international fora. Of particular importance is the question as to whether the use of eco-labels may become a (technical) barrier to trade. While from a purely legal perspective, the voluntary nature of eco-labels precludes them from contravening particular WTO legislation regarding technical trade barriers. However, in practice the situation is likely to be very different. The development and use of eco-labels is growing at a significant rate, especially in South Africa's traditional export markets. The development of ecological criteria is based on local (host-country) environmental concerns, which may be of little relevance to developing countries. Also, ecological criteria are generally drawn up with little or no regard to the interests of foreign producers. As such, the growing use and application of eco-labels, be it producer, retail or consumer-driven, is likely to present a significant long-term challenge to South African textile manufacturers. Producers may see it as an increasingly useful tool with which to extract market share preference, which would be to the detriment of those producers not having obtained a relevant label. The next section discusses the situation with regard to eco-labelling in South Africa, as well as the institutional requirements that are necessary for the successful implementation of an eco-labelling program.

13. Eco-Labelling in South Africa and Institutional Requirements

13.1 The Status of Eco-Labelling in South Africa

Eco-labelling presently does *not* enjoy widespread support in South Africa. In fact, the vast majority of end-consumers have never heard of the term, while retailers and downstream industries of the textile industry are generally ignorant about the true implications of eco-labelling. At best, many are unaware that some of the 'marks' or labels they may have heard of or seen are in fact eco-labels. The situation is similar in the textile industry. While a few textile manufacturers possess a good working knowledge on the subject, are considering or have proceeded to implementing eco-labelling, the majority are unaware of the many implications of eco-labelling, or have not even heard about the term in the first place.

There are many reasons for the status quo, most of which have been outlined later in this section, especially those which this report classifies as potential 'barriers' to eco-labelling. However, this lack of support is largely rooted in the past (relatively protected) trading conditions faced by the textile (and related) industries, as well as the country being a "developing" country, with its low to medium per capita GDP and corresponding lack of environmental awareness (and concern). It has become clear, though, that the only way for the South African textile industry to survive in the long term is to restructure and refocus towards niche and export markets, as it will never be able to successfully and sustainably compete with the low-cost producing countries of the Far East. For this, it has become necessary to focus on the market demand and potential trade barriers of those export and niche markets where (a) the greatest current comparative advantage exists with, and (b) the greatest potential for sustainable success in the future exists with, considering recent trade developments, international agreements and demand patterns.

A realisation that international trade has increased significantly in recent years, especially in consumer items such as textiles, is busy shifting the current status of eco-labelling in South Africa. This has occurred on the back of the fact that the domestic industry will no longer be shielded behind the trade barriers and protectionist attitudes of the past few decades (coupled with the strong inward focus of the previous political dispensation between the 1960's and early 90's). What may counter eco-labelling from gaining greater status and recognition is South Africa is the fact that local environmental awareness, and consequently demand for products conforming to eco-labelling specifications and standards, is still in its infancy. Where the "home" environment of an industry's manufacturing base displays such lack of awareness and demands, this may seriously hamper the elevation of the status of eco-labelling amongst all but the most forward looking manufacturers.

13.2 The Market for Eco-Labelling

The South African textile industry consists of over 700 formally recognised enterprises, although this number may not be entirely accurate as it was obtained from the latest (1996) manufacturing census, published in 2000 (Statistics SA,2000a). 22% of the enterprises fall into the 'spinning, weaving and finishing' category, while the rest are accounted for under 'other textiles', which includes automotive textiles, tents, blankets etc. The former category, while consisting of a far lower percentage of the total number of enterprises, accounts for approximately 65% of total textile industry output, against the 35% of 'other textiles'.

Earlier sections in this report have outlined the significance of the textile industry in a national manufacturing context. The industry's sales output is significant (over R10 Billion per year), while it is an important employer and provides a ready market for the output of various upstream industries. It is also an industry where international trade has increased over the past decade, and there are indications that exports are growing at a greater rate than imports (although imports still outweigh exports).

A definite (economic) basis for eco-labelling exists in South Africa. This is especially true considering:

- The **composition** of output, and share of total output that is **exported**:

The South African textile industry is well developed, and a significant share of its output is exported. Yet at the same time, it is a net importer of textiles, and especially in the lower end of the market it appears that the South African textile industry is unable to be internationally competitive. A focus on export and niche markets is required, which would require a move towards greater value-added production and specialisation. There are indications that this is already happening to a limited extent in South Africa: for example in the field of technical textiles (e.g. medical textiles, parachute and car seat material) there has been strong output growth and export market penetration, and proof that local manufacturers *can* be internationally competitive. This forms a strong case for eco-labelling.

- Significant **export growth** in recent years and composition of exports:

While exports have been growing at a greater rate than imports, it is off a lower base. However, the net trade deficit is shrinking, which is evidence of increasing export market penetration. The nature of the strong competition at the lower end of the market dictates that there needs to be an greater focus on export markets, and higher value-added production. A potential barrier to more rapid export-led growth are the stringent environmental demands in our traditional export markets (e.g. the EU and the US).

- **New export opportunities** provided by various trade agreements, especially the AGOA and EU FTA:

With the enactment of the African Growth and Opportunity Act (AGOA) and other FTAs, the textile industry has been provided with renewed export opportunities. While the AGOA as it stands now excludes duty-free access to the US for textiles, the indirect benefits of a larger market to the domestic clothing industry are likely to be significant. The EU FTA will provide easier access to EU markets and is likely to lead to a significant expansion of bi-lateral trade. This will, however, also expose the South African textile industry to greater environmental demands and standards that are common in EU markets.

- Significant **sales output** in the textile industry:

Textile industry sales are in excess of R 10 Billion. While sales in this sector are not as polarised as in some other industries, there are still a number of large textile companies that collectively account for a very significant proportion of total textile industry output. Their individual and combined market position and resource strength are significant, which puts them in an advantageous position in terms of future sales growth.

- Increased levels of **international trade** as a result of economic re-integration with the rest of the world (ROW) under the new political dispensation, as well as the effect of globalisation:

Manufacturers of textiles have no choice but to steer away from a purely local focus, and have to embrace the challenges and opportunities presented by the integration and inter-relationship of the South African economy with the ROW. One of the main impacts of globalisation are increasing levels of international trade as a result of the lowering of many trade barriers. The textile industry is no longer immune from international fashion trends, and needs to adapt to the changing textile environment not only locally, but also internationally. One of these international trends, the heightened environmental awareness especially in developed countries, has a direct bearing on the importance of eco-labelling for the South African industry, especially as developed countries form the bulk of textile industry export destinations.

The most important factor noted above, besides the fact that from a pure output and export perspective a definitive basis exists for eco-labelling, is the composition and growth perspective of South Africa's exports. Section 04 analyses the international trade performance of the South African textile industry, and finds that the top 5 destinations are the USA, UK, Italy, France and Germany (see also Appendix 04).
In fact, Section 7.3 shows that the South African textile industry has a significant comparative advantage (RCA) in trade with all of these countries (except for Germany), pointing towards the relative one-sidedness of trade with these countries (in South Africa's favour!). Collectively these destination countries account for approximately 55% of South Africa's (textile) export market, and almost one third of the total

trade in textiles. These countries are all high-income countries, and their consumers possess a relatively advanced environmental awareness.

Also, the composition of trade to these countries shows that most of South Africa's textile exports consisted of lower value-added items (e.g. fibres, yarns), while its imports are often of a higher value-added nature (e.g. made-up textiles). Free trade agreements with both Europe (EU FTA), and especially the USA (AGOA) are likely to increase the volume of exports and trade. At the very least, these agreements have provided a strong basis for the expansion of textile exports. The trade statistics, especially vis-à-vis the composition of trade and volume of exports, underline the potential for eco-labelling in South Africa. This certainly appears to be true from an export perspective, with over one third of South Africa's textile production being exported. The eco-labelling of textiles (i.e. certifying conformity with minimum environmental standards) is likely to lead to greater export market penetration, as well as a move towards greater value-added exports (i.e. up the value chain) in these countries (the information and processes inherent in products complying with eco-label and other environmental standards imply greater value added). Likewise, greater export market penetration is likely to lead to an increase in environmental demands, justifying further investment in complying with environmental standards.

South Africa's export markets and domestic market for textiles are in many ways highly dissimilar. The domestic textile market was shown to be rather unique in that relative to the size of the market, the industry produces a very diverse range of textiles in many different product categories. Market demand in South Africa encompasses developed, developing and undeveloped country characteristics.

13.3 Brief Overview of some of the Institutional Requirements of Eco-Labelling in South Africa

One of the most important requirements for the successful adoption of eco-labelling standards in a particular country or industry lies in the fact that compliance with such standards needs to be formally certified by a competent and duly authorised (accredited) body. Without the existence and availability of accredited and certified testing facilities, compliance by companies and products with minimum (environmental) standards can not be adequately verified. Without adequate verification procedures it is not possible to obtain an internationally recognised eco-label, as the relevant competent body (e.g. a EU textile eco-label competent authority) would not award a label in the presence of material doubt about the accuracy and reliability of compliance with such pre-determined standards.

13.3.1 Accreditation and Certification Bodies in South Africa

Certification refers to a procedure whereby an independent third party warrants that the product or process which has been certified meets certain pre-defined requirements. In South Africa, the most widely known

certification authorities are the South African Bureau of Standards (SABS) and the CSIR, both of which are accredited to certify a wide range of products and processes in the country. Certification organisations check and confirm whether an organisation complies with the requirements of a certain specification or standard. However, the SABS seems to fall short in terms of offering eco-labelling certification to the textile industry.

Certification should not be confused with ***Accreditation***, which refers to the procedure whereby an authoritative, governing body provides formal recognition to another authority that such is competent to carry out certain tasks involving the certification of third party products and processes (DANCED, 2000). In other words, accreditation is recognition that An authority is competent to issue certain reports or certificates. One of the main authoritative bodies giving formal accreditation to certification bodies is the South African National Accreditation System (SANAS) which is located at the CSIR campus in Pretoria.

Accreditation and *certification* are extremely important in the international trade arena. Global trade barriers are being rapidly dismantled, allowing for the free trade of goods and services. In the absence of trustworthy and consistent quality and environmental systems, personnel and product certification systems, such 'technical' trade barriers are likely to significantly stem the free flow of goods and services between regions and countries. Internationally, accreditation is headed by the International Accreditation Forum (IAF) and the International Laboratory Accreditation Co-operation (ILAC). Multilateral Agreements (MLAs) between a world-wide network of national accreditation bodies (e.g. SANAS) will eventually ensure that the competencies of testing and certification authorities are similar regardless of their location (SANAS, 2001).

13.3.2 Accreditation in South Africa – The Establishment of SANAS

Accreditation in South Africa originates started in 1980 with the establishment of the National Calibration Services (NCS). This later became known as the National Laboratory Accreditation Service (NLA). From 1995 onwards, the NLA began accrediting testing laboratories, and took over responsibility for laboratories previously accredited by the SABS (under system SABS 0259) (SANAS, 2001).

In 1995 the NLA was contracted by the DTI to establish a single national accreditation system, which lead to the establishment of the South African National Accreditation System (SANAS), a Section 21 company (i.e. company not for gain). A Memorandum of Agreement signed between the DTI and the SANAS in 1997 lead to the recognition of SANAS as the "single national authority for the accreditation of test and calibration laboratories, bodies for certification of quality and environmental management systems, product conformity certification bodies and bodies responsible for the certification of personnel and training" (SANAS, 2001). SANAS is both a member of ILAC and IAF.

Services offered by the South African accreditation authority SANAS include the following:

- **Laboratory Accreditation**: Certification of laboratory capacity and capability),
- **Certification Body Accreditation**: Certification of Quality Management Systems (QMS) and Environmental Management Systems (EMS) according to ISO / IAF guidelines
- **Inspection Body Accreditation**: This is one of the most important areas which SANAS is busy expanding. The accreditation of inspection bodies is done where such authorities comply with certain technical and management competence, and allows them to offer certification of certain products and services.
- **Training**: Training in Laboratory Management and Technical Assessments

While SANAS is recognised as the official South African accreditation authority, a number of foreign accreditation bodies exist and operate alongside SANAS in South Africa. These include the United Kingdom Accreditation System (UKAS) as well as the Dutch Council for Accreditation (RvC). Reciprocal recognition is also in place with other (equivalent) European accreditation bodies, including the Finnish Accreditation Services (FINAS), the French Accreditation Organisation (COFRAC) and the Deutsche Akreditierungsrat (DAR) in Germany (SANAS, 2001).

13.4.3 Certification in South Africa

As described earlier, certification bodies are independent organisations which warrant that a particular product, process or system meets certain pre-defined requirements. While both organisations and individual consultants that possesses the knowledge and capacity to test products, processes and systems for compliance with pre-determined guidelines could theoretically act as a certification authority, one of the most important ingredients of certification is the level of trust that users and consumers may eventually have in a certificate (of compliance). For this reason, formally accredited organisations offering certification services will be of greater significance. In order to achieve international recognition, it is important to make use of accredited organisations. In the absence of formal accreditation, companies that have obtained certification from non-accredited certification bodies may find that such an exercise will have been largely ineffective. South African consumers' relatively low awareness and requirement of formal certification makes it important that full *international* acceptance is obtained.

As SANAS is the official accreditation body in South Africa, certification authorities have the option of applying to it for official accreditation. Due to the numerous reciprocal recognition agreements between SANAS and international accreditation bodies, widespread international acceptance of SANAS accredited certification authorities is assured.

A number of certification bodies operate in South Africa. While the largest of these are all accredited by SANAS or an equivalent foreign accreditation body, previous research has shown that a significant number of (smaller) organisations are also active in this field, often without internationally recognised accreditation. There are a total of approximately 15 certification authorities active in the South African market at any one time (McCurtain, 2001). The majority of SANAS or equivalent accredited organisations have formed an association called the South African Association of Certification Bodies (SAACB) (DANCED, 2000). Organisations that fall into this group include the South African Bureau of Standards (SABS, country-wide representation), SGS International Certification Services (Gauteng), BVQI (Gauteng), Kennedy & Donkin (Gauteng) and TÜV Bavaria South Africa.

The importance of selecting a certification authority that is best suited to a company's requirements is very important, and the following factors should be taken into account (Gardiner, 2000):

- Certification bodies must be ***accredited*** to issue certificates of compliance, including for the industry in question;
- Companies should, in consultation with their stakeholders, choose a certification authority with a good **reputation;**
- The chosen certification authority should have both the **competency** (in terms of skilled and experienced personnel) as well as the **capacity** (in terms of being able to conduct the audit when it suits the company) for a successful working relationship;
- Certification **costs** should be **investigated** thoroughly beforehand to ensure clarity on this important issue. This includes obtaining a clear picture about the costs of follow-up surveillance visits;
- The certification body's **philosophy** should complement that of the company wishing to be certifies, to ensure that the company can obtain maximum value out of the certification process and experience.

The role of certification (as well as testing and inspection) authorities includes the following (SANAS, 2001):

- The testing of samples (by **laboratories**) according to a scientific methodology in order to establish the compliance with pre-determined standards or specifications

- The testing (by **inspection bodies**) of individual products, services and processes to establish compliance with certain pre-determined standards or specifications
- The certification (by **system certifiers**) of organisations for compliance with quality or environmental management systems
- The granting (by **product certifiers**) of licenses to manufacturers to mark their products as complying with certain standards or specifications, e.g. eco-labels.

The SABS appears to have the greatest market share of all the certification bodies active in South Africa, although this evidence could not be reliably substantiated due to a non-response to repeated enquiries. Notably, however, it does not currently offer eco-labelling for the textile industry, and it does not appear to be in the planning stages either (Greenwood, 2001). The CSIR is also very active in certification, and caters for the textile industry too. As discussed previously, the internationally recognised eco-label for the textile industry that it offers is the Öko-Tex scheme, which the CSIR's Textek division administers in conjunction with BTTG in the UK (Chapple, 2001). As mentioned previously, the CSIR has (as of April 2001) certified only three South African companies as complying with the Öko-Tex eco-label.

13.4 Practical Issues: Obtaining Certification

Formal certification of adherence to quality and environmental criteria is a formal procedure intended to legitimise such claims, thereby adding weight and importance to them. Such certification can be obtained from organisations that have the relevant formal accreditation either from South Africa's official accreditation authority, SANAS, or a similar foreign body. Without formal accreditation, the local and international recognition of the certification applied for and / or gained will be significantly diminished.

Companies wishing to obtain formal certification do so for a number of possible reasons. These include the direct and indirect marketing benefits, increased product differentiation, greater export market penetration and so forth. As a first step, the criteria for which certification is sought needs to be clearly defined, for example if it is quality or environmental criteria. Quality certification may include a number of SABS marks of approval (mainly product-specific), or even a complete quality management system (company-wide) such as ISO 9001. Environmental certification may be obtained for individual products and / or processes, or on a company-wide scale for a formal environmental management system such as ISO 14001.

The choice of certification required depends on the needs of the company concerned, and the characteristics of the industry concerned. In some industries it appears to be the *de facto* standard to obtain at least a minimum number of quality labels, while other industries are generally devoid of them. After identifying the appropriate label required to be certified, a company would scrutinise the criteria that need to be fulfilled to ensure compliance. The necessary information may be obtained from many of the certification

bodies operating locally and abroad, and often from independent consultants. In the case of textile companies wishing to obtain the Öko-Tex environmental label for textiles, they would need to approach the CSIR's division of Textile Technology (Textek) to obtain all the necessary information.

In some cases, a company will have to modify some of the processes used in its manufacturing set-up to comply with the criteria of the relevant label. The Öko-Tex label, for example, bans the use of certain azo-dyes and chrome (Cr^{6+}), and limits the use of formaldehyde (see Appendix 08). This means that manufacturers need to ensure adherence to these limitations, not only in their own production set-up, but also in the input materials brought in from third-party suppliers such as dye manufacturers. Sometimes pressure needs to be exerted on suppliers, or changes effected to the procurement chain and materials bought elsewhere.

Once 'internal' compliance is achieved, the company would contact the relevant certification authority (e.g. the CSIR, SABS etc.) and arrange for a certification officer to visit the company's premises and conduct any tests that are necessary to verify compliance. In many instances both the manufacturing process as well as the final product is tested. The company is liable for the costs involved with testing for compliance, as well as the applicable costs of the quality and / or environmental label. A condition of most labels is that the certification authority may conduct a certain number of random tests on the company's products during the period of using the label, as well as testing for ongoing *on-site* compliance through un-announced visits. A number of consultants are active in this field too, although it is generally advisable to differentiate between the roles of consultation ad certification to prevent conflicts of interest (i.e. where certifying authorities act as consultants at the same time).

13.5 Results of Survey amongst South African Textile Manufacturers – Eco-Labelling

This section briefly deals with some of the environmental issues raised in the survey conducted amongst South African textile manufacturers (see Appendix 11 for full survey and results). The survey achieved a response rate of 21.6% (21 samples out of a 'population' size of 97). Not all the questions in the survey were answered by all respondents, and as a consequence percentage response rates have had to be adjusted accordingly for each question.

Respondents generally felt that the South African textile industry poses no significant environmental threat, and very few had been exposed to any environmental pressure (e.g. from municipalities / local government). The majority were, however, uncertain or of the opinion that environmental pressure would increase in the short to medium term. In terms of eco-labelling, which is usually a response to environmental pressure from retailers or consumers (or a pro-active stance that pre-empts such pressure), only one respondent said that his company had obtained a recognised environmental label (Öko-Tex),

while others had obtained various SABS marks of approval (usually quality-related). While most respondents were at least aware of the existence of eco-labels for the textile industry (81%), only four respondents did actually name any (each of these respondents mentioned both the Öko-Tex and the EU Flower eco-label).

Pressure from local and international clients relating to eco-labelling was generally low – only 2 respondents (14%) stated that international clients of the company enquired about them conforming to eco-labelling specifications. No pressure and / or requests originated from local clients. Only 1 respondent (6%) planned to increase sales through the (future) adoption or compliance with eco-labels, while a further 3 respondents (19%) were considering it. The large majority or 12 respondents (75%) did not at present plan to obtain an eco-label. Of those that were planning to obtain eco-labels, all three respondents expressed interest in the EU eco-label, while one of these also expressed interest in obtaining the Öko-Tex label (which is especially popular and widely known in the German speaking countries of Europe – i.e. Germany, Austria and Switzerland). The respondents that were planning to obtain an eco-label were all hoping to benefit from greater export market penetration, while one respondent also hoped to make greater inroads in the domestic market.

The survey results show that among most respondents, eco-labelling is not perceived as being a priority. From the responses obtained, it does however become apparent that a certain amount of awareness about eco-labelling exists, although a general commitment to further investigate and possibly obtain eco-labels is lacking. This may be largely due to a perceived lack of benefit relating to eco-labels, or unawareness relating to the marketing and potential export benefits that products with an eco-labelled may hold.

13.6 Compliance with Existing Eco-labelling Schemes or Establishment of Dedicated South African Schemes

As tariff-based trade barriers between countries are scaled down or removed, largely in response to WTO regulations, so does the pressure increase for countries and industries to move towards non-tariff barriers such as eco-labelling. Section 12.4 (Eco-labelling: A Non-Tariff Technical Trade Barrier?) discusses this. The question is not *whether* eco-labelling has, and *will* have an impact on international trade, but to *what extent* individual industries will be affected. Eco-labels in the textile and clothing industries have, due to the industry's global spread especially in developing countries, received particular attention.

The exact extent of the impact that eco-labelling will have on the textile industry is very difficult to quantify. However, it is clear that environmental issues are increasingly becoming intertwined with industrial activity and production methods, as well as with international trade. Non-tariff barriers will, in effect, become a greater issue than they have ever been. In respect of eco-labelling and the South African

textile industry (the same goes for the clothing sector due to its inter-relatedness), the choice is between embracing eco-labelling (the "HIGH" road) or ignoring it (the "LOW" road). Choosing the 'high' road would mean taking a pro-active approach (especially since all indications are that the textile industry should, on the whole, focus more on export markets), while ignoring the issue (taking the 'low' road) would mean a continuation of the status quo, with likely negative long-term consequences for this sector.

Choosing eco-labelling as an option for "circumventing" potential TTBs as well as ensuring greater compliance with domestic environmental legislation presents further issues to be dealt with: should the textile industry choose to comply with existing eco-labelling schemes (such as the EU eco-label), or should the industry (or the South African Government) develop criteria for the establishment of a dedicated South African eco-labelling scheme?

Establishing a dedicated South African eco-label requires entering into a complex process of consultation with a large number of stakeholders. This is necessary to ensure that, beyond merely incorporating the views of all interested and affected parties, the criteria drawn up for the eco-label are effective and relevant. In the context of this report, eco-labels are dealt with specifically in relation to the textile industry, although a national eco-labelling scheme is likely to entail the development of criteria for a number of industrial activities, goods and services.

The development of a South African eco-labelling scheme is likely to be a time-consuming process if done correctly and systematically. While this would ensure greater relevance to the specific needs of the domestic textile industry, as well as the likely labelling (i.e. information) requirements of the consumer, a number of challenges would also need to be faced. These include issues around the need of an eco-labelling scheme in the domestic market, i.e. whether there is a need by domestic consumers for the benefits contained in a product conforming to eco-labelling criteria. More importantly, while there may be a need, the real question is whether South African consumers are willing to pay a price premium for products bearing a textile eco-label in the presence of goods with (perceived) similar quality characteristics but at a similar price. In the presence of large choices and substitute goods, it is likely that the demand for textiles is highly elastic (meaning that percentage changes in demand are likely to be greater than changes in price i.e. a 10% rise in price is likely to lead to a more than 10% drop in demand and consequently of sales volume). The sensitivity to, or strong emphasis on, price performance of textile products is likely to be a significant barrier to the establishment of a domestic eco-label. In addition, at issue is also whether the possible benefits of a domestic eco-label would extend beyond South Africa's borders, in other words whether a local textile eco-label will find acceptance in export markets and will be a benefit. This not only requires that large amounts of resources are committed, both by companies and a national eco-labelling authority, to marketing the eco-label nationally and internationally, but also that the environmental criteria embodied in the eco-label are either in compliance with, or similar to, those demanded in international

markets. It is unlikely that end-consumers, retailers and clothing manufacturers abroad will place much value on an eco-labelling scheme that is perceived to be *not* on a par with others that they are familiar with. In the case of South Africa's traditional textile export market (Europe), it is likely that the criteria for a South African eco-label would have to be consistent with those of the EU eco-label, the EU Flower.

Factors having an impact on the respectability and acceptance of an eco-labelling scheme include not only the relevance of the environmental criteria used in developing such an eco-label (i.e. the requirements), but also its administration. Especially in a developing country (such as South Africa), it is of vital importance that the administration of a South African eco-label is performed by an independent, non-industry, authority. This could include the Government, or an authority set up and funded largely by Government, yet still enjoying a certain minimum amount of autonomy.

A South African "national" eco-label would also have to be visible, and recognisable, and in some way embody environmentally preferable attributes. For example, South Africa's national bird, the Blue Crane, could be a useful emblem or 'logo'. It is widely recognisable, relevant, and embodies environmental issues (especially due to its endangered-ness). Potentially, it could become as recognisable to consumers as, for example, the World Wildlife Fund's panda bear. However, such a logo may not evoke the same response with international consumers.

Issues that need to be considered for a South African eco-label (for textiles) include:

- Relevance of criteria (for the industry and consumers);
- Current environmental awareness of consumers, retailers and manufacturers;
- Creation of awareness;
- Focus of the label: local markets, international markets, or both;
- Where focus includes international, compatibility of local criteria with those of foreign schemes;
- Time frame involved, and consultations with stakeholders;
- Local demand for a South African eco-label;
- Mutual recognition with foreign eco-labelling schemes and organisation;
- Certification and accreditation of South African administering authority.

The main alternative to the establishment of a South African national eco-labelling scheme, at least in the short term, would be a focus on compliance with international, established schemes. In this regard, the focus should start with an analysis of trade flows between the South African textile industry and its

international partners (with a focus on South African exports!). It was shown in this report that the largest trade partner with respect to exports is Europe, and the United Kingdom, Italy, France and Germany in particular. As a natural consequence, the focus should then be on national or private eco-labelling schemes in these countries. Öko-Tex (private scheme) and the EU Flower eco-label were shown to be the dominant textile eco-labels in this regard (also see Section 12.5).

The issues with regard to compliance with an established eco-label include:

- Established nature of foreign label;
- Marketing aspects - the scheme is likely to be widely recognised, accepted and respected;
- Compliance with eco-label possible in short term as procedures of obtaining it are well established;
- Environmental criteria - relevant to the South African textile industry?
- Costs: foreign body bears marketing costs of eco-label (although cost of promoting compliance of individual products is largely borne by applicant).
- Government does not have to take direct or short-term responsibility.

There are important issues to consider, not only in deciding on the 'high' or 'low' road, but also in deciding on the eco-labelling options available to the textile industry. In the case of the South African textile industry, the evidence is overwhelming that action needs to be taken to ensure the long-term survival of the textile industry. It is also clear that any future strategy must include a greater focus on exports and greater value-added production. The industry already has a firm basis from which to pursue such a strategy, with a number of competitive and innovative firms having achieved product excellence and international competitiveness.

13.7 Costs and Benefits in a South African Context

Eco-labelling brings with it definite costs and potential benefits, and for any company or organisation seeking to comply with eco-labelling standards, the likely benefits need to exceed the costs involved. This is not a straightforward decision, as the potential benefits are usually far more difficult to quantify than the probably direct costs. Quantifying the benefits may at best yield unreliable or vague results, whilst the quantification of indirect costs (such as the opportunity costs of *not* complying) are impossible to ascertain with any degree of accuracy.

13.7.1 Likely Financial Impact of Eco-Labelling on the South African Textile Industry

Eco-labelling and other certification is likely to have an increasingly significant impact on the textile industry, both domestically and abroad. While it is impossible to ascertain the exact magnitude of the effect that the different types of certification (i.e. environmental and quality) will have, more and more entities

along the supply and demand chain, from raw material processors through to the retail market and end-consumers, are demanding compliance with certain minimum standards. The days of simply producing according to the lowest price have long gone in many developed textile markets, although developing and undeveloped countries are still lagging far behind. While it is unlikely that market demand for certified products will be significant from these (latter) sectors even in the long term, pressure from developed countries and market segments will certainly continue its steep rise.

It was established and shown in previous sections that the South African textile industry is not competitive in the bottom end of the market, due to a number of factors. These include *endogenous* issues such as low labour productivity, (often) outdated capital equipment and the lack of economies of scale, and *exogenous* issues such as globalisation and decreasing barriers to trade. As a direct consequence, not only is the lower end of the domestic textile (and clothing) market less easily accessible (or more highly competitive) to local manufacturers producing for that segment, but those markets that the domestic industry ***is*** competitive in do impose greater demands on the non-price issues such as quality and environmental standards.

To some extent, a shift in focus is being forced upon the local textile industry. While the factors determining un-competitiveness are in some way a result of industry-internal issues of the past, they nonetheless require a response and an adaptation by the industry in present times. Targeting foreign textile markets is an important means, if not the only one, of achieving sustainable growth in textile sales. It is no longer a question of whether or not to export – it has become a medium term necessity for all but a few textile manufacturers operating out of South Africa.

The textile industry's size in terms of output and employment render it an important industry in South Africa, and an significant contributor to the South African economy in many ways. Its contribution to GDP and employment (it is the 14th largest manufacturing sector, and 7th largest manufacturing sector employer), as well as its direct and indirect importance to the many up-stream and down-stream industries it relies upon, increase the significance that any positive or negative impact has on the industry, and any industry that relies on it. The state of the clothing industry has a direct impact on the textile industry, both in vertically integrated enterprises as well as the rest through direct supply relationships.

Any factor having a significant financial effect on the clothing industry is likely to have an indirect, yet similarly significant effect on the textile industry. One thus needs to look at the likely financial impact of eco-labelling from two angles: firstly, the direct impact on the textile industry, and secondly, the indirect effect via the clothing industry.

The financial impact on the textile industry of eco-labelling would consequently include the costs involved with of compliance, as well as the (opportunity) costs of non-compliance:

13.7.2 Costs of Compliance with Eco-Label Standards

- The direct costs of eco-labelling certification, which depends very much on the complexity of the products to be certified and the testing procedures to be performed. As a rule of thumb companies could expect to spend approximately R10.000 for Öko-Tex compliance testing.

- The cost of implementing any changes that may be necessary in order to comply with the provisions of the relevant environmental label. This may be a negative cost, but may also be a 'positive cost' whereby the cost of any process changes is exceeded by the benefits obtained in the form of, for example, less intensive use of chemicals, water and energy savings etc.

- The information and marketing costs of first obtaining information on the correct and applicable eco-labelling scheme, and the cost of marketing compliance in existing or new output markets to prospective clients

13.7.3 Costs of Non-Compliance with Eco-Label Standards

- Loss in market opportunities especially in international textile markets. During 2000 the South African textile industry exported approximately R1.5 Billion worth of textiles. (The destination of the majority of these exports were developed countries, in particular the U.S. and Europe). Continued non-compliance with such standards may well harm present export sales, as South African products become progressively less attractive due to price considerations and / or a lack of qualitative attributes, including environmental considerations. Based on current exports, and assuming that South African produced textiles become less attractive due to non-compliance, this could easily cost the industry a percentage of its current exports. For every 1% that exports decrease by, this translates into R15 Million of existing sales, not counting the cost of opportunities forgone due to not expanding sales in some quarters. This *opportunity cost* is impossible to estimate with any measure of reliability, bearing in mind that the South African textile industry is a very small player by international standards (i.e. its size, supply and demand characteristics have no major impact on world demand and supply). The growth in market demand for environmentally textiles, combined with the new direct and indirect market opportunities offered by various FTAs (most notably with the U.S. under the AGOA and with the EU), offers virtually unlimited opportunities to the South African textile (and clothing) industries. The possible market for environmental products is thus immense and offers huge growth prospects. It is probable that the extent of market opportunities forgone by the absence of environmental compliance is only limited by capacity ceilings of the South African industry. Currently the industry's non-

utilisation of production capacity is approximately 20%, meaning that the opportunity cost of non-compliance with eco-labels is likely to be substantial (Statistics South Africa, 2001a).

- Loss in market opportunities through the textile industry's close relationship with the domestic clothing industry. The clothing industry sources large parts of its textile input material requirements domestically, thus being an important market for locally produced textiles. Non-compliance or non-availability of certification relating to environmental standards is likely to have a negative effect on the clothing industry's ability to penetrate new export markets, as it limits clothing manufacturer's opportunities. These lost opportunities are mainly linked to the subsequent constraints that may be faced by the clothing industry in pursuing export and niche markets with products that are environmentally preferable. While the local market for environmentally friendly textiles (i.e. those that are formally certified to be environmentally friendly) appears to be limited (Donnegan, 2000; Hardcastle, 2000; Kothuis, 2000; McLaughlin, 1999; Saxon, 1999; Prosser, 1999), opportunities for export market penetration would definitely be lost.

13.8 Barriers and Drivers to Growing Implementation of Eco-Labelling in South Africa

A number of important indicators point to the increasing need for environmental labelling and other certification to be afforded greater prominence in the South African textile industry. Trade patterns and related competitiveness indicators show a decline in comparative advantage of the South African textile industry in competing with the low-cost textile producing countries of the Far East. At the same time, South Africa has had some success in penetrating developed textile markets. The composition of trade shows that on the whole higher value-added products are imported into South Africa and lower value-added products exported. Within the textile production pipeline, however, South Africa is struggling to remain competitive in the lower end of the market, owing mainly to the presence of low-cost producing competitors such as China and Indonesia etc. Sustainable growth within the textile industry will only be achieved if new markets are found, especially niche and export markets where greater value is added and the domestic industry's strength can be better utilised.

Significant **barriers** to implementation of eco-labelling exist in South Africa, most notably:

13.8.1 Barriers to Eco-Labelling in South Africa

- Widespread **unawareness** of the implications or even **existence** of eco-labelling

- Widespread **unawareness** of the **environmental implications** of textile processes (previous research has shown the textile industry to be the 3rd most polluting industry in South Africa in terms of hazardous waste per unit of output) (EMG, 1993)

- A widely held **(mis)belief** among textile manufacturers that "there are no negative environmental issues in textile production"

- The **costs** involved with obtaining formal environmental certification, and the costs of potential process changes that may be necessary for compliance with certain environmental standards

- The **scarcity of certifying authorities** that deal specifically or partially with eco-labelling certification in South Africa

- A **lack of environmental demands** on textile manufacturers from its clients (for example the clothing industry, for similar reasons to the ones mentioned above)

- An overwhelmingly strong **emphasis** by South African consumers **on pure price** considerations, and lack of awareness of environmental issues. This has to do with the demographics and average income levels of South African consumers of textile products, where affordability of even basic textiles is often not guaranteed. There is a widely held belief that the domestic market for environmentally labelled textiles is insignificant, making eco-labelling financially unfeasible for South African consumers.

- **Lack of confidence** and uncertainty of textile industry decision makers in the implications of focusing and producing (a greater share) for export markets. This is usually as a result of 'unknown' market conditions, potentially (too) long lead and turnaround times, logistical considerations, lack of working capital, lack of information (export market research) and a lack of access to finance. Up to now many exporters have merely committed excess capacity and production over-runs (surpluses) to export markets.

- **Difficult trading conditions** in the textile industry in recent years, with contributing factors such as labour inflexibility, rapid growth of imports (both legal and illegal) and other structural difficulties. While these factors can be considered a barrier to eco-labelling in the South African textile industry,

they could simultaneously become a driver to help the industry overcome current difficult trading conditions through the exploration and penetration of new (export) markets.

- The presence of numerous **house-brands** in the South African clothing and textile industries, whereby it is the intention of management to create an awareness of these brands representing certain minimum quality and environmental compliance. While the quality- and environmental claims of these 'house-brands' are subjective and not independent third party claims, the relevant decision makers often feel that any 'foreign' environmental claims would 'clash' and potentially undermine their own claims (or consequently disturb the market for non-labelled products), and as a result rarely show demand for such environmental labels (McLaughlin, 1999). This lowers the environmental pressure on the textile industry, especially from the clothing industry.

- **Lack of (pro-active) institutional support** from the South African Textile Federation (Texfed) and the Government: Texfed recognises eco-labelling as a technical barrier to entry into U.S. and European textile markets, yet in no way actively advocates environmental labelling options (Claassens, 2001). A source at the DTI has stated that eco-labelling is not a priority at this stage, but may become so over the next 5 years (House, 2000). This situation may, however, change in the medium term as the DTI re-assesses its position in line with its new integrated industrial strategy (which focuses on knowledge intensive activities, moving up the production value chain etc.). The IDC, in August of 2001, called for tenders to do an elaborate study on eco-labelling options for the South African industry, with a view of providing a recommendation and baseline study to the DTI.

While the barriers to eco-labelling are significant, especially for the domestic market, there are a number of **drivers** of eco-labelling. While most of these result in voluntary acceptance as a result of forward-thinking, others are purely the result of an increasing opportunity cost of *not* complying with such specifications. Some of the most important drivers of eco-labelling include the following:

13.8.2 Drivers of Eco-Labelling in South Africa

- A fear that eco-labelling is becoming an increasingly significant **(technical) trade barrier** (TTB). With trade barriers in the form of duties and subsidies decreasing significantly over the past decade in accordance with the provisions of GATT, countries and industries are increasingly seeking alternative means of protecting their output markets. Eco-labelling is one of the more prominent (protectionist) methods utilised generally by developed countries' industries to keep competitors out of their home markets.

- Genuine **concern for the environment** is a further, albeit (probably) less significant driver of eco-labelling

- A **pro-active stance by management** and product engineers to ensure long-term environmental and financial sustainability of their products through eco-labelling

- Actual and perceived **benefits** of eco-labelling for companies trying to expand **market share in niche and export markets**. This is probably one of the most important drivers of eco-labelling, especially from a South African company perspective. This may be as a result of companies realising that expansion into export markets in no longer simply and option but a virtual necessity.

- **Pressure** on manufacturers by downstream industry, retailers and end-consumers for products showing that products conform with certain minimum environmental standards, for example the absence of (carcinogenic) azo-dyes in the manufacturing process of wearing apparel or household textiles.

- **Opportunities of export market expansion** offered by the provisions of the African Growth and Opportunity Act (AGOA) and the FTA with the European Union may only be significantly utilised if South African textile (and clothing) manufacturers conform with minimum environmental standards. The most transparent and visible means is where a product has earned a certain textile-specific eco-label.

- The **marketing benefits** offered by eco-labels, especially in terms of prestige and as a means of increasing the awareness of a product in a large, competitive market.

- The significant benefits of setting a product apart of its competitors who do not conform to such specifications and standards, and the benefits of such (qualitative) **competitive advantage**. Eco-labelling is thus an important means of **product differentiation**, especially in those markets where environmental awareness is great.

- Manufacturers are attracted to eco-labels due to the fact that they are able to obtain a price premium for their products. This naturally assumes credibility of the relevant eco-label, and a general market for 'environmentally preferable' products.

- The **prominence** of the organisation promoting the eco-label, as well as the prominence of the certification agency (and international recognition thereof) play an important role as a driver for eco-labelling

- An increasing recognition by manufacturers and retailers of **consumers' "right to know",** a realisation that is particularly prevalent in the developed countries. These countries, of course, make up much of the South African textile industry's export markets, and are thus an important consideration and driver of eco-labelling.

13.9 Eco-Labelling in the South African Textile Industry: Pipe-Dream, Possibility or Necessity?

There is no escaping the fact that eco-labelling is gaining importance in various international markets, most notably the European Union. The analysis of textile exports in Section 7.3 (and Appendix 04) has also shown that European markets are the most attractive to the South African textile industry, with the US also being a destination that is rapidly gaining in importance as an export market. While environmental issues and awareness are important considerations in foreign purchasing decisions, the same cannot, as a whole, be said for South Africa or the regional market.

The previous sections have analysed some of the critical issues surrounding the question of eco-labelling in the South African textile industry. It can be concluded that eco-labels are certainly not merely a "pipe-dream" (or threat) to the industry - eco-labels are there to stay, and will become an increasingly important consumer and (by extension) trade issue. In terms of being a "possibility", eco-labelling does not present an insurmountable technical barrier, although there are obviously direct (and indirect) costs involved.

According to Gardiner (2001), a consultant to the textile industry and formerly with the CSIR,

> "...from a technical point of view, there is no reason why any (South African) company should not be capable to at least being certified to the Öko-Tex label or being certified to ISO 14001....In general, it is my opinion that certification, whether ISO 14001 or Öko-Tex, is normally only pursued if it is a requirement to be in a (particular) market, if companies want to satisfy corporate requirements, or if the owner has a particular passion for environmental issues..."

In terms of being a 'necessity', this depends on a number of issues, most of which have been discussed in previous sections. To some extent, the importance of eco-labelling depends on the particular product, and the focus of the company. Some of the smaller players that have a specific local focus may find that the cost of obtaining an eco-label may not be financially feasible in the short or the long term. The fact that environmental awareness is still very low in South Africa and the region also does not count in favour of

eco-labels, at least in the local context. However, an ever-decreasing number of South African textile producers will be able to successfully compete locally and regionally in the lower end of the market (commodity textile production), especially in the context of globalisation and import penetration of foreign producers. Where the focus is already on export (and niche) markets, or changes towards it, eco-labelling will in due course increasingly become a 'necessity'. Compliance with the environmental criteria attached to eco-labels will also help in preventing restrictions to market access, both where foreign environmental legislation prevents the use of certain banned substances (such as azo-dyes in textile production) and where consumer environmental awareness creates increasing demand for environmentally 'preferable' products and production methods.

This chapter investigates the current status of eco-labelling in South Africa, where such programs are of relevance to the textile industry. It finds that the penetration of eco-labels in South Africa is minimal, and is limited to a very small number of companies having obtained the Öko-Tex eco-label. This is largely due to the fact that environmental awareness among South African consumers, especially in the sense that it translates into a willingness to pay a price-premium for environmentally preferable products, is virtually non-existent. However, on the basis of South Africa's growing textile exports, especially to the EU (where environmental awareness and eco-labels are much more widespread), it is suggested that a definite market exists for eco-labelled products from South Africa. The costs and benefits of compliance and non-compliance are discussed, and find the latter to be potentially significant. This is followed by an analysis of the drivers and barriers to eco-labelling in South Africa, bringing in the results of the survey conducted among South African textile manufacturers.

While South Africa clearly has the institutional capacity of introducing an eco-labelling program, doubts remain whether a South African eco-label will receive the necessary recognition in its export markets. It would seem far more useful, instead, to focus on complying with an existing, broadly recognised eco-label such as the EU eco-label. Compliance with the EU criteria is open to South African producers, who would need to satisfy the EU eco-labelling Board that they have met the relevant textile-criteria. Looking ahead, there certainly appears to be ample scope and opportunities for compliance with existing eco-labels, which would certainly go a long way towards preventing eco-labels being used effectively to reduce South Africa's market access opportunities abroad. While eco-labelling would seem to be an important means of value-adding, other programs can also play an important role in facilitating continued access in South Africa's traditional and non-traditional export markets. Some of these programs are discussed in the following section, which deals with the ISO quality and environmental management systems, and the Worldwide Responsible Apparel Program.

14. Additional Tools for Achieving Increased International Recognition and Market Penetration

14.1 Introduction

While eco-labelling is one of the most important and widely utilised tools used to certify compliance with minimum environmental (and consequently, often quality) standards, other forms of certification are also available to the international and domestic textile industry. While eco-labels are generally tools used to show compliance with individual processes and / or products, some quality and environmental systems reach beyond this and certify compliance with a broader range of criteria. These are often based on a company-wide state of affairs (especially the ISO quality and environmental systems, discussed below), and in the case of the aforementioned, widely recognised and respected.

14.2 ISO: the International Organisation for Standardisation

The International Organisation for Standardisation is an international federation of national standard setting bodies from approximately 130 countries (ISO, 2001). This non-governmental organisation (NGO) was established in 1947, and being a NGO, unlike the United Nations, the national members of ISO are not delegations of the governments of those countries. According to ISO's official website (ISO, 2001), its mission is to "promote the development of standardisation and related activities in the world with a view to facilitating the international exchange of goods and services, and to developing co-operation in the spheres of intellectual, scientific, technological and economic activity".

Financial support is provided through member countries' payment of membership fees (based on their GNP and trade volumes) (Rothery, 1995). Through the promotion and development of consistent and internationally recognised standards, the ISO is an important role player in the facilitation of international trade, and the co-operation in technological and scientific matters. ISO standards thus play an important role in making the development, manufacturing and supply of products and services more efficient, safer and cleaner (ISO, 2001). The agreements reached as a result of the ISO's activities are international but voluntary for member countries, and are published as International Standards. The organisation has its headquarters in Geneva, Switzerland. The ISO has brought out a number of international standards, the most widely known organisational management programs being the ISO 9000 (quality) and ISO 14000 (environmental) series of standards.

14.2.1 ISO 9000 Quality Standards

The ISO 9000 series of standards followed on from the quality standards (BS 5750) developed by the British Standards Institute (BSI), and is an "integrated, global system for optimising the quality effectiveness of a company or organisation, by creating a framework for continuous improvement" (Rothery, 1996).

ISO 9000 is thus an integrated quality management system that shows an organisation's formal commitment to upholding minimum quality standards in all spheres of its operating environment. In order for a company to obtain formal ISO 9000 quality certification, a formal quality management system (QMS) needs to be implemented. This shows competitors, customers, suppliers, employees and all other role-players in the procurement and sales environment of that company that certain minimum quality standards have been obtained, and are consistently adhered to. This includes criteria such as documentation, procurement and tenders, and all spheres of interaction with the company's stakeholders and partners.

The ISO standards enjoy international recognition and respect, and as such the benefits obtained through the implementation of ISO 9000 (as well as ISO 14000) are both direct and indirect. The direct benefits may be classified as those being incidental to the company's operations, greater product and service quality, transparency and increased employee morale. Adherence to the formal QMS, which is integral to ISO 9000, furthermore leads to numerous financial benefits in the short and long term.
The indirect benefits to a company of a formal QMS, of course, are the economic benefits obtained through greater national and international recognition and respect by all of the company's stake-holders, the competitive advantage gained over competitors, and the assurance of pre-defined minimum standards being met.

14.2.2 ISO 14000 Environmental Standards

The ISO 14000 series of *environmental* standards is, in a number of ways, similar to the ISO 9000 *quality* standards. This series of standards was originally the result of ISO's commitment to "sustainable business development" following their support of the 1992 United Nations Conference on Environment and Development (UNCTAD) held in Brazil (Rukato, 1999). The ISO 14000 standards thus became one of the many responses by industry to a growing awareness of the need for sustainable industrial development, and today enjoy widespread acclaim and respect. Whereas in the past business decisions and environmental investments were made largely where bottom-line reward was expected in the short term, changes in environmental awareness have lead to the economic benefits of such investments also coming through better public relations and marketing (Benchmark Environmental Consulting, 1995, cited by Rukato, 1999)

The ISO 14000 series consists, not unlike the ISO 9000 series, of a number of different standards. While all standards are for voluntary use, ISO 14001 has as its basis a formal environmental management system (EMS), the provisions of which are mandatory (as opposed to voluntary) for organisations seeking compliance with and formal certification according to ISO 14001. As such, ISO 14001 contains those elements of the ISO 14000 series of standards that can be formally and objectively audited for certification and/or for self-declaration purposes (Rukarto, 1999). UNCTAD's *Commission on Trade in Goods and Services* decided, as early as 1997, to convene an Expert Meeting with a mandate to "examine the operation, and the possible trade and investment impacts of environmental management standards, particularly the ISO 14000 series, on developing countries, and the identification of possible opportunities and needs in this context" (WTO, 1997). The benefits of implementing an EMS may bring a number of benefits to companies, including (UNCTAD, 2001):

- Improvement in the **management** of environmental aspects;
- **Reduction** in the cost of waste management and/or **savings** in consumption of energy and materials;
- Increased export competitiveness and the avoidance of **trade barriers**; and
- Enhancement of an organisation's corporate **image**.

Compliance with the provisions of ISO 14001 is **not** an overly technical or impossibly difficult task, and should thus be well within reach of many organisations. What makes compliance with ISO 14001so accessible (in this case particularly the textile industry) is the fact that it is not an absolute standard (and thus differs significantly from most other ISO standards), but rather a policy commitment to compliance with applicable environmental legislation, as well as a commitment (on the part of the company) to continual improvement in its environmental performance. This ensures that, for example, companies carrying out similar lines of activity, but with different environmental performance, can both achieve formal ISO 14001 certification.

ISO 14001 should thus form an important consideration for a company wishing to:

- Implement a formal environmental management system (EMS), or where one already exists, to implement improvements thereto as is consistent with the requirements of ISO 14001;

- Demonstrate its compliance with applicable environmental legislation, as well as the company's policy of continued commitment to improving its environmental performance, to all network partners (local and international clients, competitors, shareholders, suppliers and employees);

- Seek formal certification of its compliance with the provisions of ISO14001, including its EMS, from an independent, (preferably) internationally accredited certification authority. In South Africa's case, where a company trades internationally it is preferable for ISO 14001 certification to be done through an international certification authority, or one which has been accredited by SANAS which has in place formal mutual recognition agreements with international accreditation authorities.

- Avoid the negative trade implications of non-compliance with ISO 14001 as this environmental management system is increasingly becoming a technical trade barrier (TTB). There is a "concern that ISO 14001 certification may become a *de facto* condition for doing business, at least in certain (industry) sectors, in a manner similar to the development of ISO 9000 quality management standards" (UNCTAD, 2001). Non-compliance with the ISO 14001 standard especially in developing countries may lead to decreases in trade between developed and developing countries.

Companies wishing to comply with the provisions of ISO14001 may do so to obtain formal certification, or may simply wish to use compliance for self-declaration purposes. Self-declaration means that a company declares compliance with ISO 14001 through self-regulated audits as opposed to independent 3rd party certification. While self-declaration may have benefits in terms of costs and cash flow, it is often not enough to convince external stakeholders such as shareholders, clients, authorities and insurers (Gardiner, 2000).

14.2.3 The importance and potential of ISO system certification in South Africa

It has long been common knowledge that South African consumers are on the whole not very discerning when it comes to environmental practices of organisations and suppliers. In the mind of many manufacturers, this has the direct consequence that the costs of environmental management or other environmental considerations can not easily be passed on to consumers, as the resulting price premium may lead to significant un-competitiveness. However, this argument is only **partly true**, and certainly **losing** some **relevance** in South Africa.

It is only "**partly true**" as it pre-supposes that environmental management costs money and negatively affects the financial bottom line. The argument is based on the fact that traditionally, added to the fact that consumers are not very environmentally aware, lack of legislation or poor enforcement of environmental laws allowed many companies to place large burdens on the environment. Tightening legislation and enforcement thereof is increasingly pressurising companies to improve their environmental management, leading to parts of the original argument falling away. Also, the presumption that environmental management necessarily imposes costs on the company is flawed. In most instances, better environmental

management will lead to significant cost savings (through better housekeeping and consequently energy and water cost savings), as well as protect the company from the potentially huge burden of an environmental disaster such as a chemical spill etc.

The argument is also "**losing relevance**" as it ignores the increasing globalisation of trade, and its influence on all spheres of industrial activity the world over. No longer can international market demand be ignored, nor the fact that domestic companies are increasingly competing in the international arena, either directly or indirectly. Even where companies are not showing any interest in the export markets, they can not escape the direct competition through foreign competitors entering South African markets. This erosion of their traditional markets necessitates increasing productivity and competitiveness locally, as well as expansion into foreign markets, in order to remain sustainably profitable. South Africa's relatively weak currency allows for a certain competitiveness to be gained and should enhance the potential for successful export market penetration. It is well known that environmental awareness and demands are far stronger and wide-spread in developed countries, and as these generally make up the core markets for South Africa's exports, such market characteristics need to be taken seriously. For this purpose, compliance with and ISO program can provide South African manufacturers with an important vehicle for penetrating export and niche markets, owing to the fact that ISO 9000 and ISO 14000 are internationally recognised and respected. While some industrial sectors in South Africa still believe that there is no need to do more than simply comply with legal requirements, there is no doubt that any company wishing to operate in today's trading environment and beyond must take its commitment to good environmental performance as seriously as it does its commitment to technical and financial competence (Hobbs and Ireton, 1996,). The same source found evidence that shareholders, investors, insurance companies, commercial and international banks are also becoming increasingly mindful of the risks and liabilities they may incur when financing a client company that does not possess formal environmental certification and by implication environmental risk management.

While the drivers of ISO certification essentially revolve around good corporate governance, greater marketing potential, penetration of export markets and market demands, there are also a number of barriers to the implementation of ISO certification. One of the most important of these is the actual and perceived cost of implementation of a formal system (in this case the emphasis being on the environmental system), the actual or perceived financial feasibility of it, as well as the general lack of awareness of environmental issues and knowledge of ISO systems. The cost, for example, of implementing a formal ISO 14001 system depends on a number of factors, and relate mainly to the complexity and size of the organisation involved and the current degree of environmental awareness, culture and policy within the organisation. Another important factor is the choice of certification authority used to validate and certify the implementation of ISO 14001, which depends on the choice of whether local or foreign certification authorities are used. At present there are very few local certification organisations offering ISO 14001 certification, the most well

known being the SABS. However, Rukato (1999) found that companies which were aggressively targeting export markets often felt that they preferred obtaining certification through an internationally known and recognised authority, even though the SABS is accredited by South Africa's official accreditation authority (SANAS) which in turn holds mutual recognition (MRAs) agreements with many overseas accreditation authorities.

Compliance with the requirements of ISO 14001, and formal certification thereof, is one of the alternative tools South African textile manufacturers can utilise to overcome technical trade barriers, especially when producing for export markets. It will provide them with a competitive advantage over many of their competitors, both domestically and abroad, and ensure that this increasingly wide-spread requirement (especially in foreign markets) does not become an impediment to trade.

14.3 The Worldwide Responsible Apparel Program (WRAP)

The *Worldwide Responsible Apparel Program* (WRAP) is a new program that began operations in June 2000.The program was started by the American Apparel Manufacturers Association (AAMA) in response to the increasing importance of social and environmental issues in the production of clothing (and related industries such as textiles), and has since registered "over 370 sewn product factories from 45 countries and over 100 manufacturers" with WRAP (Doherty, 2001). Bearing in mind that the AAMA represents 80% of the clothing sold at wholesale in the U.S. (WRAP, 2001a), any developments on this front are certainly relevant to South African manufacturers wishing to export to this vast market. It has subsequently been endorsed by a number of international clothing and textile companies and industry organisations. One of these is Clofed, the South African Clothing Federation. The program is still in its infancy in South Africa (Theron, 2001).

The WRAP scheme is a very broad and multi-criteria scheme, that unlike eco-labelling, does not certify individual products or processes, but is factory based. It goes beyond environmental criteria, - in fact, compliance with all relevant environmental legislation is merely one of many criteria that need to be fulfilled by a manufacturer seeking WRAP certification. Others include occupational health issues, remuneration, fair working conditions and other workplace regulations. For an overview, see Appendix 12.

According to Doherty (2001), executive director of the WRAP Certification Program,

"...The WRAP Certification is a global factory certification program based upon universal WRAP Production Principles which address workplace conditions, workers' rights, as well as environmental safeguards, compliance with customs regulations and cooperation on drug trafficking interdiction. Any manufacturer from the sewn product industry can seek WRAP Certification by participating in the program..."

"...The WRAP Certification Program is available to traditional apparel manufacturers as well as those manufacturers that produce textile, furniture, sporting goods, carpeting, luggage, etc.". "...the WRAP Certification Program is a

globally endorsed factory certification program for the 'sewn products' industry (which can include textiles as well)..."

To become WRAP certified, factories need to undergo a three-step process (WRAP, 2001b):

- **STEP 1**: Self Assessment. The factory must apply for and be registered for the WRAP Certification Program, after which it receives the relevant monitoring documentation. Included in this documentation is a questionnaire that needs to be completed and sent back to the WRAP. An independent, accredited Monitor can then be selected to evaluate and verify the information.

- **STEP 2**: Independent Monitoring. The factory contracts and schedules an onsite evaluation visit by the selected Monitor. The Monitor will subsequently recommend certification or identify areas where corrective action is required before compliance is achieved.

- **STEP 3**: Final Review and Follow-up: This entails the review of the compliance documentation and the decision whether to certify the facility. The term of certification is subject to a decision by the WRAP board, based on a number of risk factors. The facility may also receive future follow-up visits to ensure continued compliance with the stipulations of the WRAP program.

The scheme appears to be growing significantly world-wide, and especially in the US, and companies not WRAP-certified may find it becoming a potential trade barrier in future. The WRAP Principles are core standards for manufacturing companies participating in this program. Its objective is to independently monitor and certify compliance with these socially responsible global standards for manufacturing, and ensure that sewn products are produced under lawful, humane and ethical conditions. Participating companies voluntarily agree that their production and that of their contractors will be certified by the WRAP Certification Program as complying with these standards (WRAP, 2001a).

As mentioned earlier, the program is still in its infancy in South Africa, although compliance will become increasingly important for manufacturers wishing to export to the United States.

According to Theron, CEO of the Clothing Federation (Clofed) of South Africa (2001):

"...it has already become evident that WRAP will become increasingly important. Some exporters are already being asked by US customers to become WRAP compliant". (However) "this does not mean that smaller US customers will *necessarily* (emphasis added) make such requests. Large retailers obviously have a public profile which they cannot afford to have damaged..."

By logical extension, compliance with the WRAP should be investigated by textile companies wishing to grow exports to the U.S., as well as industry organisations such as Texfed. Even though the program is aimed predominately at the clothing industry, it has a potentially significant impact on the textile industry. The WRAP program potentially impacts on those clothing and textile manufacturers in South Africa that are vertically integrated, as well as on those textile firms that supply the U.S. garment industry with some of its input materials.

The ISO quality and environmental systems are widely recognised internationally, and provide South African firms with an additional tool for increased international recognition and market penetration. While an ISO certification does not replace the benefits of an eco-label, it can nonetheless be of significant importance in gaining market access to developed-country markets. As tariff-based trade barriers are lowered or removed completely, firms need to extract market preference through greater product differentiation. ISO management systems can thus play an important role in achieving this role, even though the certification is a firm-level one rather than being purely product-based.

15. Conclusions and Recommendations

The focus of this report is on the textile industry. But, it is of little benefit to view and analyse this sector in complete isolation of its wider trading environment, due to the strong linkages and interdependencies between the textile industry and both upstream (such as the manufacturers and suppliers of raw materials) and downstream (such as clothing and retail) industries.

Few industries have been the focus of greater attention and debate the world over than the textiles (and clothing industries). Reasons for this include the fact that textile articles of some sort are basic commodities and necessities, and as a consequence, most countries a certain degree of textile manufacturing capacity. Much of the world's textile manufacturing capacity is located in the developing countries. In addition, the textile industry is one of the most important employers in the world, and a very important market for many upstream industries. Textiles play a critical role in industrial and economic development.

The South African textile industry is clearly not competitive in certain market segments. Unable to compete in bulk commodity textiles, the South African textile industry has little choice but to move up the value chain. The majority of the country's textile imports originate from China, Indonesia and Taiwan, most being commodity-type items where not much value has been added. In a number of cases, the 'landed' *price* of such imports is below the *costs* of local production. The analysis of the South African textile industry's trade performance, whilst highlighting the import penetration of foreign produced textiles, also shows that exports have been increasing significantly over the past few years. In addition, the rate of growth of exports has in recent years exceeded the rate of growth of imports, although the extent and influence of *illegal* imports is difficult to quantify. The resulting decreasing trade deficit is largely due to strong export growth to traditional trade partners such as the European Union and the United States. Recently concluded trade agreements with both these countries/ regions are likely to provide further momentum to export growth.

Other core issues include the cost of capital, idle production capacity and labour productivity. Real interest rates, while significantly lower in 2001 than they were three years previously during the worldwide emerging market crisis, are still a significant barrier to investments in capital equipment. Most textile industry technology is imported from Europe, such that in addition to the relatively high cost that a firm must incur to obtain capital, manufacturers were in this regard also negatively affected by the unfavourable exchange rate. These two factors had a negative effect on investments in capital stock. As a result, much of the industry's capital stock is old. The textile industry has also been characterised by idle capacity, largely due to lack of demand rather than the unavailability of labour or raw materials. This could, however, also encourage the industry to pursue new (export) markets. Low levels of labour productivity (or high per-unit labour costs) have consistently been cited as a major problem in South Africa, in spite of South Africa's labour costs being far lower than those in its highly industrialised trade partners.

This appears to be due to substantial training and education deficiencies, and specifically the limited nature of formal textile training available in South Africa.

While the developed countries of Europe and Northern America are attractive trade partners for the expansion of trade through better market access, there are a number of challenges that have to be met. The underlying argument draws attention to the inter-relatedness of environmental and trade issues, and the fact that environmental issues may soon become a particularly important barrier to the further expansion of exports. While tariff-based trade barriers are being removed in line with WTO regulations, other (technical) barriers are effectively taking their place. In this regard, eco-labels are important instruments used by a number of (mainly developed) countries that allow the differentiation of a product by facilitating formal compliance with pre-determined environmental criteria. Most developed-country trade partners of the South African textile industry have established (and are promoting the compliance with) national eco-labelling programs. While access to such eco-labels is generally open to foreign producers, the methodology used in drawing up the criteria is usually geared towards the needs of the 'home' country, with little regard to the specific environmental issues that foreign producers face. Being classified as *standards* by the WTO due to eco-labels being mostly of a voluntary nature, they escape being in contravention of WTO regulations pertaining to technical trade barriers. Effectively, however, this is just a technicality, and in practice eco-labels are likely to become significant trade barriers in future.

In this regard, South Africa, and in the context of this thesis the South African textile industry in particular, has three choices:

Option 1: to do "business as usual" and run the risk of potentially declining international market access while continuing to be under severe pressure from imports;

Option 2: follow the "high road" and concentrate on developing a South African national eco-labelling scheme that addresses the environmental issues of the textile industry and is consistent with the needs of local and overseas consumers, or

Option 3: follow the "middle road", which could be a compromise, by setting in place structures for the development of a national eco-labelling scheme while in the short to medium term moving towards applying and obtaining a foreign eco-label valid in those markets that are of particular importance from an export perspective (for example the EU Eco-Label).

While the first option would entail the risk of the South African textile industry being (potentially) increasingly marginalised in terms of access to European and U.S. markets, only focusing on the "high road" option may shift any advantages of eco-labelling into the distant future. This relates to the fact that

the development of eco-labelling programs, judging from European experience, can take up to a decade (from conception to completion of criteria for a variety of product groups). There also remain the unresolved issues of whether foreign markets will readily distinguish a South African eco-label.

The third option, the "middle road", would seem the most appropriate route to follow for the South African authorities and the domestic textile industry. Compliance by textile firms with foreign eco-labels, in particular the EU eco-label, should be prioritised. An important driver for firms wanting to explore such eco-labelling options would be for the Government, through the DTI, to lend administrative and financial support to such efforts. For example, attractive incentives and tax write-offs could be offered, covering the cost of technology changes leading to improved environmental performance, and compliance testing. Such moves are likely to also have positive externalities, such as greater compliance with domestic environmental legislation and the associated benefits to the environment. At the same time, active steps should be taken to investigate the feasibility of a South African eco-labelling scheme. In this regard, the Government, in partnership with foreign eco-labelling institutions and domestic stakeholders, can play an active and important role in devising a framework for the development of relevant eco-labelling product groups and criteria. The IDC is presently developing the terms of reference (TOR) for a study that will investigate the feasibility and implications of eco-labelling in South Africa.

The benefits of following a strategy in line with that proposed above could be extended through additional institutional support, which should entail taking a more holistic view on trade and environment related matters. Such support could either be directly by the Government or, indirectly, at arms length through quasi-governmental organisations such as the CSIR or the SABS. Areas where the industry requires additional support include areas such as the development of export marketing strategies (with an additional emphasis on positive environmental attributes) and funding for R&D, with a strong focus on applying foreign technologies to local needs. Textile firms, meanwhile, must be innovative partners, and actively forge alliances with local and international companies (both upstream and downstream), with a view to both extending local production capacity and developing a stronger export market presence. Any sectoral program for the development of the South African textile industry should provide support incentives to facilitate this.

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Appendices

Appendix 01: Definitions of SMEs / SMMEs

The South African National Small Business Enabling Act has set the following quantitative and qualitative criteria for SMEs:

Quantitative Criteria	**(2 or more criteria have to be satisfied for each classification)**			
Sector	**Size**	**Annual Turnover**	**Total Assets (excluding fixed property)**	**Total Number of Employees**
Group A	**Class**	**Less than**	**Less than**	**Number**
Agriculture, Forestry, Fishing, Transport, Storage and Communication, Financing, Insurance, Real Estate and Business Services, Community, Social and Personal Services	**Small** **Medium**	**R 2.5 Mil.** **R 15 Mil.**	**R 0.5 Mil.** **R 3.0 Mil**	**5 – 50** **51 –100**
Group B	**Class**	**Less than**	**Less than**	**Number**
*Mining and Quarrying, **Manufacturing**, Electricity, Gas and Water, Construction, Wholesale and Retail Trade, Catering and Accommodation Services*	**Small** **Medium**	**R 5.0 Mill.** **R 25 Mill.**	**R 1.0 Mill.** **R 5.0 Mill.**	**5 – 50** **51 – 200**
Qualitative Criteria (Compulsory)				
• Private and Independent Ownership; or • Co-Operatively Owned and Managed; • Must not form part of an Enterprise that exceeds quantitative criteria as laid out above; • May have more than 1 Branch				

Table A.01 South African National Small Business Enabling Act Definition of SMEs

The Small Business Development Council (SBDC) (now *Business Partners*) defines SMEs quantitatively and qualitatively as follows (HSRC, 1994):

Small Business Development Council Definition of SMEs
...*[Q]uantitatively* by the number of employees in the firm, and (sometimes) by market share and total capital investment • Micro → <10 employees • Small → < 50 employees • Medium → 50 – 200 employees
...*[Q]ualitatively* by: • close links between management and ownership; • independent decision making; • personalised management; • entrepreneurship / risk-taking behaviour.

Table A.02 Small Business Development Council Definition of SMEs (HSRC, 1994)

It is interesting in this context to reflect also on the definition of SMEs used by the European Union (1996). There companies are defined as being SMEs if they conform with the following criteria:

European Union Definition of SMEs			
	Micro	**Small**	**Medium**
Employees	< 10	<50	<250
Annual Turnover	N/a	<7 million ECU (+/- R 45 Mill.)	< 40 million ECU (+/- R 260 Mill.)
Balance Sheet Assets	N/a	<5 million ECU (+/- R 32 Mill.)	<27 million ECU (+/- R 175 Mill.)
Independence of Company:	Less than 25% of the company must be directly or indirectly owned by a single company, or jointly by a number of companies, who are not defined as being SMEs		

Table A.03 European Union Definition of SMEs (European Union, 2000)

Appendix 02: Quantitative Overview of Industrial Activity within SADC

The Top Goods-Producing, Employment and Export Sectors in the SADC Region					
Top Producing Goods Sub-Sectors		**Top Employment Sub-Sectors**		**Top Exporting Sub-Sectors**	
Sector	% of Non-Services Output	Sector	% of Non-Services Employment	Sector	% of Non-Services Exports
Food Products	12.4	Agriculture n.e.c.	41.1	Other Manufacturing	7.2
Industrial Chemicals	7.5	Beef	10.3	Basic Iron and Steel	5.7
Agriculture n.e.c.	5.8	Maize	5.0	Machinery	4.5
Motor Vehicle	4.9	Food Products	4.0	Agriculture n.e.c.	3.4
Basic Iron and Steel	3.9	Other grains	3.5	Food Products	3.3
Fabricated Metal Products	3.7	Tobacco (agr.)	3.3	**Textiles**	**3.1**
Beverages	3.6	Clothing	2.3	Tobacco (agr.)	2.9
Machinery	3.5	**Textiles**	**2.3**	Electrical Machinery	2.8
Other Chemicals	3.4	Horticulture	1.9	Non-ferrous Metals	2.6
Paper	3.4	Fabricated Metal Products	1.6	Industrial Chemicals	2.4
Textiles	**2.7**	Electrical Machinery	1.1	Sugar	1.8
Electrical Machinery	2.5	Other Chemicals	1.1	Clothing	1.5
Clothing	2.3	Sugar	1.0	Paper	1.4

Table A.04 The Top Goods-producing, Employment and Export Sectors in the SADC Region (Valentine, 1998)

Appendix 03: The Manufacturing Sector in South Africa: Number of Enterprises and Contribution to Output

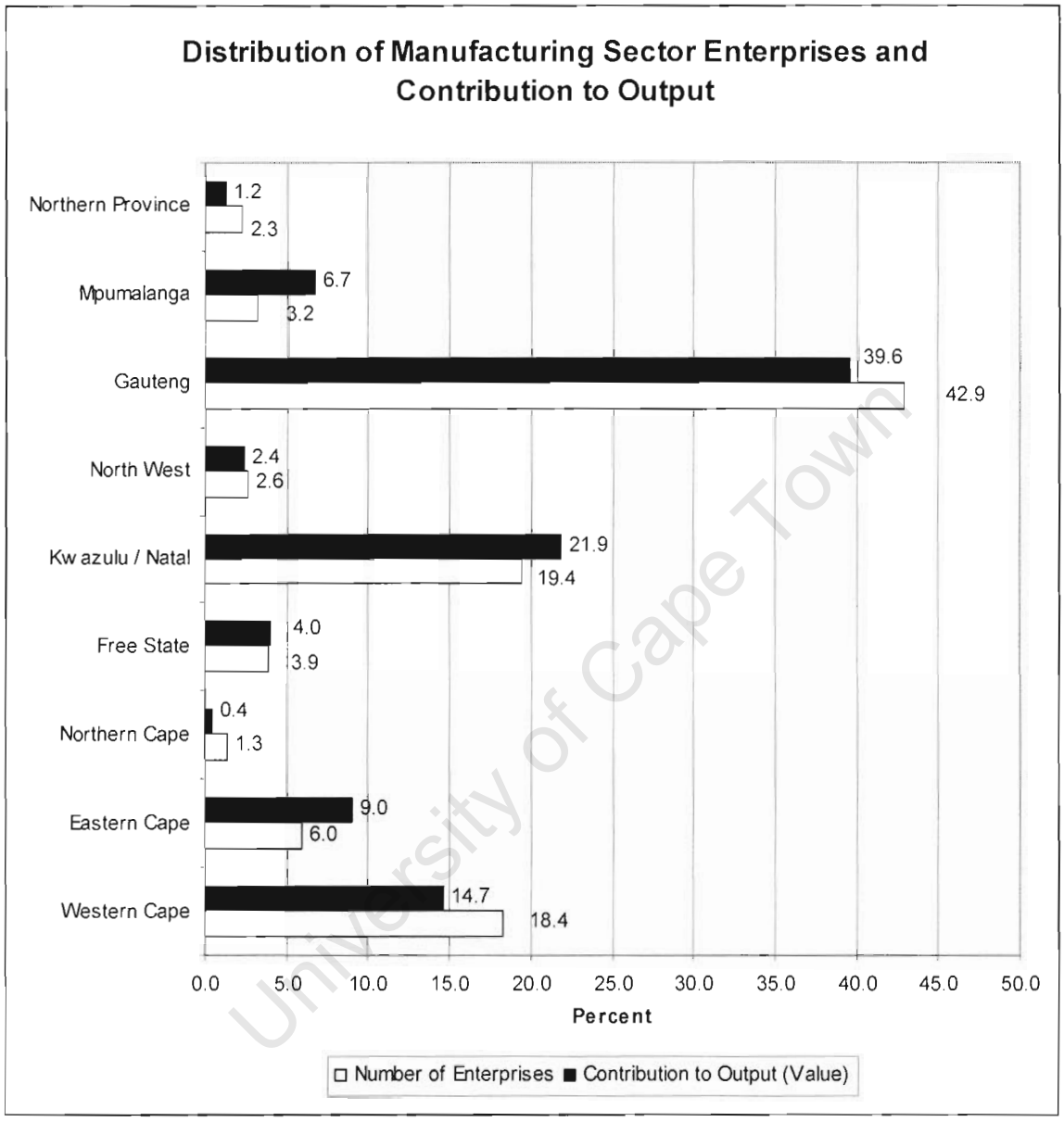


Fig. A.01 **The Distribution and Output of the Manufacturing Sector by Province (Statistics South Africa, 2000a)**

Appendix 04: International Textile Trade Statistics

Exports: The largest 25 International Trade Partners of the South African Textile Industry

Country	EXPORT (R 000)				Rank			Proportion 2000 Annual		
	MAY.00	*2000 ytd*	*1999*	*1998*	*2000*	*1999*	*Change*	*%Total*	*Cum.*	*Growth*
U.S.A.	78980	303266	649221	487682	1	1	0	21.00%	21.00%	12.10%
UNITED KINGDOM	54479	237059	607586	517667	2	2	0	16.40%	37.40%	-6.40%
ITALY	31295	140824	305559	259079	3	3	0	9.80%	47.20%	10.60%
FRANCE	17518	74849	190867	208762	4	4	0	5.20%	52.40%	-5.90%
GERMANY	15174	58140	151267	169112	5	5	0	4.00%	56.40%	-7.80%
ZIMBABWE	8965	53343	109758	113083	6	6	0	3.70%	60.10%	16.60%
MAURITIUS	17060	45777	75220	34904	7	10	-3	3.20%	63.30%	46.10%
ZAMBIA	9464	41286	89096	67327	8	8	0	2.90%	66.10%	11.20%
MOZAMBIQUE	11779	38890	58894	40595	9	14	-5	2.70%	68.80%	58.50%
CHINA	11650	35121	59084	37054	10	13	-3	2.40%	71.20%	42.70%
KOREA REP. (SOUTH KOREA)	6201	31475	68717	25037	11	11	0	2.20%	73.40%	9.90%
JAPAN	5260	29117	66342	62486	12	12	0	2.00%	75.40%	5.30%
AUSTRALIA	5591	23110	81661	80015	13	9	4	1.60%	77.00%	-32.10%
TAIWAN	5771	22588	99424	72588	14	7	7	1.60%	78.60%	-45.50%
MALAWI	4984	19319	40589	32402	15	20	-5	1.30%	79.90%	14.20%
INDIA	5081	16721	25817	36376	16	29	-13	1.20%	81.10%	55.40%
BRAZIL	3791	15770	42826	43048	17	18	-1	1.10%	82.20%	-11.60%
UNITED ARAB EMIRATES	3650	14932	47656	52490	18	15	3	1.00%	83.20%	-24.80%
IRELAND	5083	13616	40461	34695	19	22	-3	0.90%	84.20%	-19.20%
KENYA	3321	12608	38934	34242	20	23	-3	0.90%	85.00%	-22.30%
CANADA	2909	12512	36295	35203	21	25	-4	0.90%	85.90%	-17.30%
SPAIN	3464	12506	31447	42556	22	27	-5	0.90%	86.80%	-4.60%
BELGIUM	1520	12441	43672	74735	23	17	6	0.90%	87.60%	-31.60%
INDONESIA	6146	11361	41678	21117	24	19	5	0.80%	88.40%	-34.60%
ANGOLA	2762	10985	36730	41281	25	24	1	0.80%	89.20%	-28.20%
TOTAL Countries	***352733***	***1443887***	***3515538***	***3069295***	***0***	***0***	***0***	***100.00%***	***100.00%***	***-1.40%***

Source: (DTI, 2000)

Imports: The largest 25 International Trade Partners of the South African Textile Industry

Country	IMPORT (R 000)				Rank			Proportion 2000 Annual		
	MAY.00	*2000 ytd*	*1999*	*1998*	*2000*	*1999*	*Change*	*%Total*	*Cum.*	*Growth*
CHINA	86747	417249	557790	439599	1	1	0	17.50%	17.50%	79.50%
TAIWAN	59336	237447	534073	554694	2	3	-1	9.90%	27.40%	6.70%
KOREA REP. (SOUTH KOREA	51441	233786	547598	486659	3	2	1	9.80%	37.20%	2.50%
U.S.A.	39414	137156	275104	237535	4	6	-2	5.70%	42.90%	19.70%
UNITED KINGDOM	30790	109704	254202	258185	5	8	-3	4.60%	47.50%	3.60%
GERMANY	21486	104973	260015	305003	6	7	-1	4.40%	51.90%	-3.10%
INDIA	21264	104772	280853	350388	7	5	2	4.40%	56.30%	-10.50%
ITALY	19093	90176	205723	257194	8	10	-2	3.80%	60.10%	5.20%
INDONESIA	23486	88780	211346	181414	9	9	0	3.70%	63.80%	0.80%
PAKISTAN	22055	81341	93503	71490	10	16	-6	3.40%	67.20%	108.80%
MALAWI	11994	76139	346397	330683	11	4	7	3.20%	70.40%	-47.20%
HONG-KONG	14684	66464	166024	182371	12	11	1	2.80%	73.20%	-3.90%
ZIMBABWE	12604	59691	164853	257154	13	12	1	2.50%	75.70%	-13.10%
NETHERLANDS	13915	57487	139555	138903	14	13	1	2.40%	78.10%	-1.10%
BELGIUM	16010	55358	107850	125533	15	15	0	2.30%	80.40%	23.20%
JAPAN	14735	52591	110352	115926	16	14	2	2.20%	82.60%	14.40%
THAILAND	8434	43923	84191	90710	17	17	0	1.80%	84.40%	25.20%
TURKEY	10405	41205	79041	97960	18	18	0	1.70%	86.20%	25.10%
FRANCE	6800	29962	74776	84165	19	19	0	1.30%	87.40%	-3.80%
SPAIN	6292	27934	50899	52721	20	22	-2	1.20%	88.60%	31.70%
MOZAMBIQUE	6012	25978	54256	43319	21	21	0	1.10%	89.70%	14.90%
PORTUGAL	6719	25105	30644	29315	22	25	-3	1.10%	90.70%	96.60%
ZAMBIA	3959	21876	68559	81099	23	20	3	0.90%	91.60%	-23.40%
MALAYSIA	2729	15806	28027	23330	24	26	-2	0.70%	92.30%	35.40%
SWITZERLAND	3383	15582	31056	41103	25	24	1	0.70%	93.00%	20.40%
TOTAL Countries	***557432***	***2388867***	***5052677***	***5206842***	***0***	***0***	***0***	***100.00%***	***100.00%***	***13.50%***

Source: (DTI, 2000)

Total Trade: The largest 25 International Trade Partners of the South African Textile Industry

Country	TOTAL TRADE (R 000)				Rank			Proportion 2000 Annual		
	MAY.00	*2000ytd*	*1999*	*1998*	*2000*	*1999*	*Change*	*%Total*	*Cum.*	*Growth*
CHINA	98397	452369	616873	476653	1	4	-3	11.80%	11.80%	76.00%
U.S.A.	118394	440422	924325	725216	2	1	1	11.50%	23.30%	14.40%
UNITED KINGDOM	85269	346763	861788	775852	3	2	1	9.00%	32.30%	-3.40%
KOREA REP. (SOUTH KOREA	57641	265261	616314	511696	4	5	-1	6.90%	39.30%	3.30%
TAIWAN	65107	260035	633496	627282	5	3	2	6.80%	46.00%	-1.50%
ITALY	50388	231000	511282	516272	6	6	0	6.00%	52.10%	8.40%
GERMANY	36660	163113	411282	474115	7	7	0	4.30%	56.30%	-4.80%
INDIA	26345	121493	306671	386764	8	9	-1	3.20%	59.50%	-4.90%
ZIMBABWE	21569	113033	274611	370236	9	10	-1	2.90%	62.40%	-1.20%
FRANCE	24318	104812	265643	292927	10	11	-1	2.70%	65.20%	-5.30%
INDONESIA	29631	100141	253025	202531	11	12	-1	2.60%	67.80%	-5.00%
MALAWI	16978	95458	386986	363085	12	8	4	2.50%	70.30%	-40.80%
PAKISTAN	22362	88162	127855	114159	13	18	-5	2.30%	72.60%	65.50%
JAPAN	19995	81708	176694	178412	14	15	-1	2.10%	74.70%	11.00%
HONG-KONG	16853	72859	210877	239629	15	13	2	1.90%	76.60%	-17.10%
NETHERLANDS	15951	67894	180080	183700	16	14	2	1.80%	78.40%	-9.50%
BELGIUM	17530	67799	151522	200268	17	17	0	1.80%	80.20%	7.40%
MOZAMBIQUE	17790	64869	113151	83914	18	20	-2	1.70%	81.90%	37.60%
ZAMBIA	13424	63162	157655	148427	19	16	3	1.60%	83.50%	-3.80%
MAURITIUS	19513	52728	84759	38715	20	23	-3	1.40%	84.90%	49.30%
TURKEY	11479	47146	91920	111129	21	22	-1	1.20%	86.10%	23.10%
THAILAND	8434	44044	92574	96624	22	21	1	1.10%	87.30%	14.20%
SPAIN	9756	40439	82346	95277	23	24	-1	1.10%	88.30%	17.90%
AUSTRALIA	9903	37042	119403	109641	24	19	5	1.00%	89.30%	-25.50%
PORTUGAL	6787	28518	45243	47558	25	30	-5	0.70%	90.00%	51.30%
TOTAL Countries	***910165***	***3832754***	***8568215***	***8276137***	***0***	***0***	***0***	***100.00%***	***100.00%***	***7.40%***

Source: (DTI, 2000)

Trade Balance: **The largest 25 International Trade Partners of the South African Textile Industry**

Country	TRADE BALANCE (R 000)				Rank			Proportion 2000 Annual		
	MAY.00	*2000ytd*	*1999*	*1998*	*2000*	*1999*	*Change*	*%Total*	*Cum.*	*Growth*
U.S.A.	39566	166110	374118	250147	1	1	0	N/a	N/a	6.60%
UNITED KINGDOM	23690	127355	353384	259482	2	2	0	N/a	N/a	-13.50%
ITALY	12201	50649	99837	1885	3	4	-1	N/a	N/a	21.80%
FRANCE	10718	44887	116091	124597	4	3	1	N/a	N/a	-7.20%
MAURITIUS	14606	38825	65680	31093	5	5	0	N/a	N/a	41.90%
ZAMBIA	5505	19410	20537	-13772	6	13	-7	N/a	N/a	126.80%
MOZAMBIQUE	5767	12912	4638	-2724	7	29	-22	N/a	N/a	568.10%
KENYA	2800	11430	38203	31126	8	7	1	N/a	N/a	-28.20%
MALAYSIA	-2694	-13379	-21341	-18014	273	257	16	N/a	N/a	50.50%
SPAIN	-2829	-15428	-19453	-10165	273	256	17	N/a	N/a	90.30%
PORTUGAL	-6651	-21692	-16046	-11072	273	254	19	N/a	N/a	224.50%
JAPAN	-9476	-23474	-44011	-53440	273	258	15	N/a	N/a	28.00%
TURKEY	-9332	-35264	-66163	-84790	273	262	11	N/a	N/a	27.90%
BELGIUM	-14490	-42917	-64178	-50798	273	261	12	N/a	N/a	60.50%
THAILAND	-8434	-43801	-75807	-84796	273	263	10	N/a	N/a	38.70%
GERMANY	-6311	-46833	-108748	-135891	273	265	8	N/a	N/a	3.40%
NETHERLANDS	-11879	-47080	-99030	-94105	273	264	9	N/a	N/a	14.10%
MALAWI	-7010	-56821	-305808	-298280	273	269	4	N/a	N/a	-55.40%
HONG-KONG	-12515	-60069	-121170	-125113	273	266	7	N/a	N/a	19.00%
PAKISTAN	-21748	-74519	-59152	-28821	273	260	13	N/a	N/a	202.40%
INDONESIA	-17340	-77418	-169668	-160297	273	267	6	N/a	N/a	9.50%
INDIA	-16183	-88050	-255036	-314012	273	268	5	N/a	N/a	-17.10%
KOREA REP. (SOUTH KOREA)	-45240	-202311	-478881	-461623	273	271	2	N/a	N/a	1.40%
TAIWAN	-53565	-214858	-434649	-482106	273	270	3	N/a	N/a	18.60%
CHINA	-75097	-382128	-498706	-402545	273	272	1	N/a	N/a	83.90%
TOTAL Countries	***-204699***	***-944980***	***-1537139***	***-2137547***	***0***	***0***	***0***	N/a	N/a	***47.50%***

Source: (DTI, 2000)

Appendix 05: Brief Overview and Financial Analysis of the Companies Listed on the Clothing, Textiles and Footwear Sector

Below is a brief overview of the companies listed within the Clothing, Textiles and Footwear (CTF) sector of the Johannesburg Stock Exchange, as well as an explanation of the terms and ratios used. Where a company is clearly solely involved in the *footwear* industry, it has been excluded from this section, notwithstanding the fact that it falls within the broad definition of this sector both on the JSE as well as with the DTI. However, a certain amount of overlap between footwear and clothing and/or textiles may still occur. As a certain amount of overlap usually occurs between textile and clothing enterprises, both types have been included here.

Market Capitalisation: This is an indication of the size of the company by placing a value on the company's issued share capital. The value is derived by multiplying the number of issued shares by the market (traded) price of its shares.

Turnover: This represents the value of annual sales of the company, and gives an indication of its size.

Pre-Tax Profit: This is an indication of the company's profitability, and it is the accounting net-profit before provision is made for tax (including special taxation write-offs which may affect the bottom line).

Return on Capital Employed: This is a ratio (percentage) of the net profit as a portion of total capital invested (capital includes shareholder funds, long term loans etc.). It indicates the relationship between the net profit and the funds employed to generate this profit.

Pre-Tax Profit as a % of Turnover: This ratio is an indicator of the net-profitability of the company, i.e. it indicates what percentage of every sales-Rand contributes towards the company's pre-tax profit.

Debt as a % of Equity: This is an important ratio as it indicates the gearing of the company. The gearing refers to the relationship between 3rd party finance (such as loans from financial institutions) and shareholders (owners') funds. A high ratio has the potential to impose a much greater burden on the company in terms of meeting interest rate payments. On the other hand, a certain amount of leverage may in fact increase the potential returns to the company's shareholders, especially if the cost of capital (i.e. interest rate) is lower than the return on investment required by the shareholders.

Net Asset Value per Share as a Percentage of Market Price: This ratio indicates the relationship between value of the company's assets (divided by the number of shares) and the prise each share is trading at. A value above 100 indicates that the company's share price is trading at a discount to its underlying

asset value, while a value below 100 indicates that the market value per share exceeds the company's underlying net asset value per share. It should be noted that a strong driver of under- over overpricing (i.e. values above or below 100 in this category) is shareholder and investor *expectations*: the expectation of negative financial performance or difficult trading conditions is likely to increase the discount at which shares are trading at relative to the company's underlying net asset worth.

Brief Analysis of the Publicly Listed Companies

The following information was gathered using various sources (BFA Net, 2000; The Investor's Group, 2000; Company Prospectuses), and the period under review is from 1997 to 1999, unless the latest financial year-end information (i.e. for 1999) was not readily available at time of writing.

- **AM Moolla Group Ltd**

The group's subsidiaries and divisions manufacture a variety of clothing products, specialising in casual wear and sportswear for South Africa's differing income groups. Since the middle of 1997 the company's share price has significantly under-performed the sector index. The company listed on the JSE in 1997, and is located in the Durban region (Kwazulu / Natal). [turnaround 2000, better results published 03/11/00]

A M Moolla Group Ltd	1999	1998	1997
Market Capitalisation at Year-End (Rm)	40.0	89.1	
Turnover (Rm)	287	172	241
Pre-Tax Profit (Loss) (Rm)	29.2	16.8	21.6
Return on Capital Employed (%)	15.1	16.9	N/a
Pre-Tax Profit as a % of Turnover	10.2	9.8	N/a
Debt as a % of Equity	3.3	6.5	N/a
Net Asset Value per Share as a % of Share Market Price	440.4	129.8	N/a
Number of Employees	5000		

- **Adonis Knitwear Holdings Ltd**

The company carries on business as manufacturers and distributors of high quality, exclusive mens and ladies knitwear. During 1999 and 1998 the company's share price significantly under-performed the sector index. The company was founded in 1952.

Adonis Knitwear Holdings Ltd	1999	1998	1997
Market Capitalisation at Year-End (Rm)	N/a	7.3	6.7
Turnover (Rm)	N/a	17.4	16.5
Pre-Tax Profit (Loss) (Rm)	N/a	1.07	1.22
Return on Capital Employed (%)	N/a	-6.1	8.3
Pre-Tax Profit as a % of Turnover	N/a	-6.6	6.1
Debt as a % of Equity	N/a	37	20.2
Net Asset Value per Share as a % of Share Market Price	N/a	507.6	277.3
Number of Employees	N/a		

- **Burlington Industries Ltd**

While Burlington is a listed company, its shares are largely owned directly and indirectly by its directors (92%). The company's nature of business consists of "the manufacture of mens' shirts, leisurewear and knitwear; ladies and girls knitted outerwear; mens' knitted outerwear and casual-wear; ladies sportswear and childrens' fashionwear." The company was founded in 1946.

Burlington Industries Ltd	1999	1998	1997
Market Capitalisation at Year-End (Rm)	N/a	12	2.1
Turnover (NB. Turnover is expressed as % increase over previous year)	N/a	266	329
Pre-Tax Profit (Loss) (Rm)	N/a	-1.73	-0.71
Return on Capital Employed (%)	N/a	-9.4	-4.4
Pre-Tax Profit as a % of Turnover	N/a	N/a	N/a
Debt as a % of Equity	N/a	426	215
Net Asset Value per Share as a % of Share Market Price	N/a	N/a	22
Number of Employees	N/a		

- **Coastal Group Ltd**

The company's main business is in the "manufacturing of quality polyester fabric and denim fabric and garments", and thus falls into CTF sector grouping on the JSE. It was founded in 1946 and listed on the JSE in 1987. The company has various subsidiaries which, both locally and abroad, with the main holding being in Hammarsdale, Kwazulu / Natal. The company's share-price has outperformed the sector index since 1997, although it has recently encountered financial difficulties resulting in a loss for the last financial period. [cash flow difficulties, share trade suspended, up to R 1 Billion in creditor claims for group]

Coastal Group Ltd	1999	1998	1997
Market Capitalisation at Year-End (Rm)	N/a	332	273
Turnover (Rm)	240.4	251	254
Pre-Tax Profit (Loss) (Rm)	(39.3)	30.7	26.2
Return on Capital Employed (%)	N/a	5.3	8.2
Pre-Tax Profit as a % of Turnover	N/a	13.2	10.1
Debt as a % of Equity	N/a	61.2	15.6
Net Asset Value per Share as a % of Share Market Price	N/a	114.3	52.5
Number of Employees	N/a		

- **Frame Group Ltd**

Frame has a number of divisions and subsidiaries in the textile and clothing industries, amongst whom Frame Textiles and Romatex. Frame Textiles contributes approximately 65% to the group's turnover. The company was founded in 1933 and first listed in 1944 on the JSE, making it one of the oldest manufacturers of textiles in South Africa. The company's share price has significantly outperformed the sector index. The groups latest results, released in August 2000, showed a very significant increase in net profit compared to the previous period. At the same time it was the target of take-over attempts by its management on the one side, and the *Seardel Group* (same sector) on the other.

Frame Group Ltd	1999	1998	1997
Market Capitalisation at Year-End (Rm)	261	477	287
Turnover (Rm)	1274	1323	1177
Pre-Tax Profit (Loss) (Rm)	98.2	92.3	71.3
Return on Capital Employed (%)	8.5	7.9	5.2
Pre-Tax Profit as a % of Turnover	7	6.1	4.3
Debt as a % of Equity	4.1	5.3	6.3
Net Asset Value per Share as a % of Share Market Price	245.4	225.4	257.7
Number of Employees	N/a		

- **Glodina Holdings Ltd**

Glodina is involved in the manufacture of "a broad range of towelling products, branded babies' napkins, towels and face cloths", and thus falls into the CTF sector. The company's share price has under-perfored the index since 1997. It was founded in 1986, and is located in the Hammarsdale region in Kwazulu / Natal.

Glodina Holdings Ltd	1999	1998	1997
Market Capitalisation at Year-End (Rm)	10.6	9.3	21.8
Turnover (Rm)	141	127	115
Pre-Tax Profit (Loss) (Rm)	-3.6	-6.83	4.92
Return on Capital Employed (%)	-7	5	1.3

Pre-Tax Profit as a % of Turnover	-5.3	4.3	1.2
Debt as a % of Equity	55	41.3	37
Net Asset Value per Share as a % of Share Market Price	584	264.8	260.6
Number of Employees	N/a		

- **Gubb & Inggs Ltd**

The company's nature of business lies in the "scouring, carbonising and combing of wool and mohair for trading divisions and on behalf of other clients in the wool and mohair trade". It was founded in 1916, and has thus been in operation for almost a century already. The company listed on the JSE in 1964, and its share price has in the past few years quite closely followed the sector index. With rising oil prices having a significant upward price impact on wool's substitute materials (such as polyester, acrylic etc.), it is likely that increasing demand for wool and wool-related products and services will bode well for this company.

Gubb & Inggs Ltd	1999	1998	1997
Market Capitalisation at Year-End (Rm)	12.2	17.9	24.4
Turnover (Rm)	280	294	328
Pre-Tax Profit (Loss) (Rm)	2.6	-3.06	2.45
Return on Capital Employed (%)	1.5	-1.8	1.2
Pre-Tax Profit as a % of Turnover	4.5	-4.5	4.1
Debt as a % of Equity	162.2	158.3	201.2
Net Asset Value per Share as a % of Share Market Price	455.5	359.6	263.9
Number of Employees	407	450	N/a

- **Ninian and Lester Holdings Ltd**

Ninian and Lester manufactures "knitted fabrics for clothings, furnishings and industrial applications as well as mens' and boys' under- and outerwear, ladies under- and outerwear, socks for men, women and children, and yarns. Well known brand names manufactured by the company include Jockey, Jockey for Her, Skants, Elmar, Bioguard, Hilton and Dare to be Different". The company was founded in 1936 and listed on the JSE in 1969. Its share price has in the past three years closely followed the sector index, and significantly outperformed it during 1995 and mid-1997. In terms of profitability, the group has remained fairly constant over the past 5 years, although the 1998 results were significantly worse than the period under review.

Ninian and Lester Holdings Ltd	1999	1998	1997
Market Capitalisation at Year-End (Rm)	33.7	15.9	34.5
Turnover (Rm)	337	345	369
Pre-Tax Profit (Loss) (Rm)	15	4.31	17.9
Return on Capital Employed (%)	N/a	4.3	17.0
Pre-Tax Profit as a % of Turnover	N/a	1.2	4.8
Debt as a % of Equity	N/a	2.9	4.0
Net Asset Value per Share as a % of Share Market Price	N/a	564.9	206.5
Number of Employees	2403	2494	

- **Pals Holdings Ltd**

Pals Holdings Ltd's nature of business lies in the "manufacture and supply of mens-wear for national and export markets under a variety of labels". The company was founded in 1937 and listed in 1987. It appears to have performed satisfactorily during the period under review, with pre-tax profits being (marginally) positive. The company's share price has at various time under- and outperformed the sector index – the most notable out-performance being in 1997.In terms of market capitalisation and turnover, the group is one of the smaller ones listed in this sector on the JSE.

Pals Holdings Ltd	1999	1998	1997
Market Capitalisation at Year-End (Rm)	3	5.5	7.2
Turnover (Rm)	46.4	34.6	70.1
Pre-Tax Profit (Loss) (Rm)	1.2	0.57	1.33
Return on Capital Employed (%)	7.7	0.8	6.3
Pre-Tax Profit as a % of Turnover	2.6	0.4	1.9
Debt as a % of Equity	2.9	4	2.2
Net Asset Value per Share as a % of Share Market Price	155.4	191.1	199.2
Number of Employees			

- **Seardel Investment Corporation Ltd**

Seardel is largely involved in the apparel / clothing industry, although it also has interests in textile manufacturing and accordingly derives a portion of its income from such holdings. The company was founded and listed in 1968, and is, in terms of market capitalisation (1999 = Rm 110) a significant player in the sector. Turnover has increased during the period under review, although pre-tax profitability has decreased slightly. The company has to some extent focused on the export markets, and has made use of various export incentive schemes, including the DCCS (Duty Credit Certificate Scheme). The company's share price has closely followed the CTF index, although it outperformed it during 1996 and partly during 1997. The group was at one stage part of the Frame Group. During the second half of 2000, it was

attempting to take over the *Frame Group* (same sector). This would consolidate the operations of the largest textile company with those of the largest clothing manufacturer in South Africa.

Seardel Investment Corporation Ltd	**1999**	**1998**	**1997**
Market Capitalisation at Year-End (Rm)	110	139	195
Turnover (Rm)	1738	1729	1699
Pre-Tax Profit (Loss) (Rm)	-12.1	87.1	23.6
Return on Capital Employed (%)	-0.2	7.0	5.5
Pre-Tax Profit as a % of Turnover	-0.1	2.5	2.8
Debt as a % of Equity	44.7	26.8	15.5
Net Asset Value per Share as a % of Share Market Price	N/a	281.5	186.8
Number of Employees			

- **Tolaram 2000 Ltd**

Tolaram 2000 Ltd is an investment company within the CTF sector due to its "holdings of long-term investments in industrial textile undertakings". The current directors of this investment group are all non-South Africans (mainly from Singapore), and the group was originally founded in 1968 and listed on the JSE in 1969. Turnover has decreased over the past 5 years, and the company's share price has under-performed the sector index. The low volume of traded shares and close shareholdings do, however, make a comparison with the sector index less meaningful. Pre-tax profits have become increasingly negative during the period under review. In terms of market capitalisation, the company is insignificant relative to other groups / companies in this sector.

Tolaram 2000 Ltd	**1999**	**1998**	**1997**
Market Capitalisation at Year-End (Rm)		3.5	8.2
Turnover (Rm)		52.9	76.0
Pre-Tax Profit (Loss) (Rm)		-12.5	-7.94
Return on Capital Employed (%)		-22.8	-11.9
Pre-Tax Profit as a % of Turnover		-23.6	-10.5
Debt as a % of Equity		1314.2	236.6
Net Asset Value per Share as a % of Share Market Price		N/a	261.9
Number of Employees		N/a	

Appendix 06: The Revealed Comparative Advantage (RCA) in Trade Definition and Formulas

'Comparative Advantage' (CA) is a term used in economic models that seeks to explain the trade flows between 2 or more different regions or countries. It provides an indication of the direction of net trade flows (as a whole, or per product category), as well as offering insight into the magnitude of the composition of such trade. In economic terms, this model shows how 2 or more countries that are able to produce a variety of products at different costs will be better off if they engage in trade, than they would have been under 'autarky' (a situation of no trade) (Lipsey et al; 1990). CA is a relative concept that is not distorted by absolute values, and thus allows one to make deductions about trade patterns by it providing insight into directional changes of net trade. This makes the CA concept a valuable tool for policy makers and the textile industry.

The two possible formulas for calculating comparative advantage are the 'Balassa' formula and the 'own-trade' formula (Valentine, 1998).

The resultant values generated by these formulas are commonly referred to as RCA (revealed comparative advantage). Applying the Balassa formula, "if the share of a country's exports to total trade in that commodity were higher than the share of its total exports in world trade, the exporter had a comparative advantage in the export of that commodity". The presence of CA would, in this case, generate a quotient of >1, with 1 being the cut-off point (i.e. no CA). A quotient of between 0 and 1 would indicate the absence of comparative advantage.

Revealed Comparative Advantage: The Balassa Formula

$$RCA_{ijk} = \frac{X_{ijk} \sum_{i=1}^{m} X_{ijk}}{\sum_{k=1}^{n} X_{ijk} \sum_{i=1}^{m} X_{ijk} \left(\sum_{k=1}^{n} X_{ijk} \right)}$$

where: n = number of products,

m = number of importers,

X_{ijk} = exports of country i to country j of commodity k

The 'Own-Trade' formula is slightly different from the Balassa formula above, but nevertheless has been shown to have a strong positive correlation with it (Valentine, 1998). Due to the significantly reduced trade data requirements when applying the 'Own-Trade' formula, the RCA quotients in this report where generated using that formula. As with all statistical analyses, especially of this nature, the results should only be used as indicators and not unduly relied upon.

To generate the RCA quotient using the 'own-trade' formula, the proportion of the *difference* between exports and imports is related to the *sum* of exports and imports. In other words, the *net exports* are divided by the *total trade*. By definition, the range of RCA quotients would in this instance always lie between –1 and +1, as the difference between exports and imports has to be smaller than its sum. A positive value (i.e. $0 < RCA < 1$) would indicate the host country's comparative advantage in the trade of a certain good / commodity, whereas a RCA value less than 0 (i.e. $0 > RCA > -1$) would indicate that no comparative advantage exists. Naturally, where the (export and import) base values that are used refer to *total* industry exports, the RCA would in turn reflect on the industry as a whole. Small-scale deviations may occur amongst individual product categories. The formula can equally be applied to certain product categories only, resulting in a RCA quotient that refers only to such products.

Revealed Comparative Advantage: The 'Own-Trade' formula

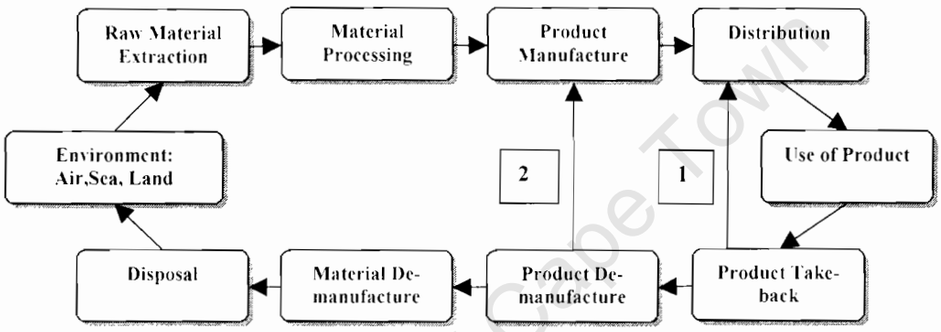
$$RCA = \frac{X_k - M_k}{X_k + M_k}$$

where X = exports of commodity k,
M = imports of commodity k,
and for the purposes of this research, k referring to textile products

Appendix 07: Overview of Life-Cycle Analysis (LCA)

According to the International Organisation for Standardisation, (ISO, 1995), which develops international product, process and methodological standards, a Life Cycle Assessment (LCA) is a "systematic tool of assessing the environmental impacts associated with a product or service to: build an inventory of those inputs and outputs, and identify the most significant aspects of the system relative to the objective of the study. LCA considers the environmental impact along the continuum of a product's life (i.e. cradle to grave) from raw materials acquisition to production, use and disposal. The general categories of environmental impacts to consider include resource depletion, human health, and ecological consequences".

Generically, the **life cycle** of a product from raw material extraction to final disposal can be illustrated as follows (adapted from Bras, 1997):



Notes: 1. **Direct recycling / reuse**
2. **Re-manufacturing of reusable components**

Fig. A.02 Generic Representation of a Product's Life Cycle

As discussed earlier in the report, many eco-labels, particularly those applicable to the textile industry, are based on a life-cycle approach. The ecological criteria are developed and drawn up after analysing the various stages of a products life cycle, and identifying the ecological issues involved in the various mining, raw material extraction, manufacturing, re-use and disposal stages. Not all eco-labels have criteria based on the entire life cycle of the product, rather, many focus on only part of the product's life cycle and thus make use of partial LCA.

The LCA methodology is not without controversy: where ecological criteria have been drawn up based on a 'location-based LCA' (i.e. based upon the environmental concerns of a particular country or region such as Europe), and where these criteria were perhaps identified in a not entirely transparent form (or in the absence of representatives of third party and developing countries and industries), accusations have been made (especially by developing countries) that the LCA has led to trade protectionism. The environmental concerns of highly developed and developing countries often differ significantly, and mean that certain developed country ecological criteria are not applicable to developing countries. A LCA based entirely on a certain set of ecological criteria of a particular geographic region may thus discriminate against manufacturers of other regions, and consequently be construed as being a technical trade barrier (TTB).

Much work is being done currently, including efforts by the ISO, to streamline the application of LCA and drawing up of ecological criteria. This is to ensure that LCA does not lose credibility as being a protectionist trade barrier by the developed world to restrict market access from the developing world. This is important in relation to eco-labelling, as the ecological criteria of most eco-labels applicable to the textile industry are based on a LCA approach.

Appendix 08: Ecological Criteria of the Öko-Tex Eco-Label for Textile Products

ECOLOGICAL CRITERIA of the Öko-Tex Eco-Label for Textile Products

Specific Öko-Tex Standard:	**Öko-Tex 103**	**Öko-Tex 103**	**Öko-Tex 106**	**Öko-Tex 109, 110**	**Öko-Tex 111, 112**
Description	**Direct Skin Contact**	**Without skin contact**	**Baby Clothing**	**Textile Furnishing Fabrics and Curtains**	**UPHOLSTERY FABRICS, BLANKETS, CUSHIONS (AND THEIR FILINGS)**
Criteria					
Certain azo-dyes	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited
Formaldehyde	75 ppm	300 ppm	75 ppm	300 ppm	75/120 ppm
Pentachlorophenol	0.05 ppm	0.5 ppm	0.05 ppm	0.5 ppm	0.5/ 0.05 ppm
Pesticide	Total 1 ppm	Total 1 ppm	Total 0.5 ppm	Total 1 ppm	Total 1.0/ 0.5 ppm
Other Compounds	prohibited chlorogenic carriers	prohibited chlorogenic carriers	prohibited chlorogenic carriers	prohibited chlorogenic carriers	prohibited chlorogenic carriers
Quality or process demands	Yes	Yes	Yes	Yes	Yes
Arsenicum	1.0 ppm	1.0 ppm	0.2 ppm	1.0 ppm	1.0 / 0.2 ppm
Antimony	-	-	-	-	-
Lead	1.0 ppm	1.0 ppm	0.2 ppm	1.0 ppm	1.0/ 0.2 ppm
Cadmium	1.0 ppm	1.0 ppm	0.1 ppm	0.1 ppm	0.1 ppm
Chromium	Cr VI prohib., Cr 2.0 ppm	Cr VI prohib., Cr 2.0 ppm	Cr VI prohib., Cr 1.0 ppm	Cr VI prohib., Cr 2.0 ppm	Cr VI prohib., Cr 2.0/ 1.0 ppm
Mercury	0.02 ppm	0.02 ppm	0.02 ppm	0.02 ppm	0.02 ppm
Nickel	4 ppm	4 ppm	1 ppm	4 ppm	4/1 ppm
Copper	50 ppm	50 ppm	25 ppm	50 ppm	50/ 25 ppm
Cobalt	4 ppm	4 ppm	1 mg/kg	4 ppm	4/1 ppm
Zinc	-	-	-	-	-
ppm = parts per million					

Appendix 09: Ecological Criteria of the EU Eco-Label for Textile Products

ECOLOGICAL CRITERIA of the EU Eco-Label (EU Flower) for Textile Products

Below is a list of the ecological criteria that have to be met in order to obtain an EU eco-label (European Union, 1999).

Life Cycle Analysis: Fibres

Limitation of toxic residues in fibres

- Acrylic: Acrylonitrile < 1.5 mg/kg.
- Cotton: residues of certain pesticides < 0.05 ppm .
- Elastane: Zn < 1 000 ppm.
- Greasy wool and other keratin fibres: limitations of certain pesticides.
- Man-made cellulose: AOX < 250 ppm.
- Polyester: Antinomy < 300 ppm.
- Polypropylene: no lead based pigments.

Reduction of air pollution during fibre process

- Acrylic: acrylonitrile < 1 g/kg.
- Elastane: aromatic diisocyanates < 5 mg/kg.
- Man-made cellulose: S < 160 g/kg (filament) and 30 g/kg (staple).
- Polyamide: N 2 O < 1 g/kg.
- Polyester: VOCs < 1.2 g/kg.

Reduction of water pollution during fibre process

- Flax and other bast fibres: COD/TOC from water retting reduced by at least 75% (hemp) and 95% (linen, other).
- Viscose: Zn < 1 g/kg.
- Cupro: Cu < 0.1 ppm.
- Greasy wool and other keratin fibres: COD < 60 g/kg, 75% reduction of COD, off-site treatment.

AOX: chlorinated compounds.
COD: Chemical Oxygen Demand.
VOC: Volatile Organic Compounds.

Life Cycle Analysis: Production, Use and End of Life

Limitation of the use of substances harmful for the environment in particular aquatic environment and health

- 90% of carding and spinning oil waxes and finishes and 95% of seizing detergents, fabrics softeners shall be sufficiently biodegradable or eliminable.
- Aromatic compounds in mineral oils used for carding and spinning < 1 ppm.
- No tetra and pentachloro-phenol, cerium compounds, halogenated carriers.
- No heavy metals and formaldehyde in stripping and depigmentation.
- No APEOs, DTDMAC, DSDMAC, DHTDMAC, EDTA in detergents, fabric softeners and complexing agents.

- AOX emissions from bleaching agents < 40 mg Cl/kg (100 mg in certain cases).
- Level of impurities in dyes (in ppm):
- As < 50. Cd < 20. Cr < 100. Cu < 250. Hg < 4. Ni < 200. Pb < 100. Sb < 50. Sn < 250. Zn < 1500.
- Level of impurities in pigments (in ppm):
- As < 50. Cd < 50. Cr < 100. Hg < 25. Pb < 100. Sb < 250. Zn < 1000.
- Chrome mordant dyeing only for wools and other keratin fibres. Potassiumdichromate < 1.8 %, sodium dichromate < 1.5% for blacks, max. 1% for other shades, Cr III < 5 mg/l, Cr VI < 0.5 mg/l. from chroming bath.
- Discharge to the water of metal complex dyes based on Cu, Cr or Ni: max. 7% (if constitutes more than 20%). After treatment: Cu < 75 mg/kg (staple, yarn, fabric), Cr < 50 mg/kg, Ni < 75 mg/kg.
- No azo dyes that cleave to a list of aromatic amines.
- No dyes classified as carcinogenic, mutagenic, toxic for reproduction according to Dir. 67/548/EEC.
- No potentially sensitising dyes if fastness to perspiration > 4.
- Printing pastes < 5% VOCs. No plastisol based printing.
- Formaldehyde < 30 ppm for infant products, 75 ppm for products in direct contact with the skin, 300 ppm for others.
- COD from wet-processing < 25 g/kg. If on-site treatment, 6 < pH < 9 and temperature < 40°C.
- No flame retardants classified as carcinogenic, mutagenic, toxic for reproduction and dangerous for the environment according to Directive 67/548/EEC.
- Shrink resistant finishes only allowed for wool slivers.

Performance and Durability Criteria

The following tests shall be carried out either on dyed yarn, final fabrics or final product:

- Dimensional changes during washing and drying : 6% for knitted products, 8% for terry towelling, 4% for other woven products.
- Colour fastness to perspiration (acid, alkaline), washing, wet rubbing, dry rubbing, light (see criteria).

Appendix 10: Example of SANAS Accreditation Certificate

THE SOUTH AFRICAN NATIONAL ACCREDITATION SYSTEM

CERTIFICATE OF ACCREDITATION

This is to certify that

THE SOUTH AFRICAN BUREAU OF STANDARDS (SABS)

CERTIFICATION BODY NUMBER: C 03

has been accredited by the South African National Accreditation System
to undertake certification of Environmental Management Systems to the
requirements of SABS ISO 14001
as per schedule and

COMPLIES WITH ISO/IEC GUIDE 62:1996

While this certificate remains valid,
the SABS is authorised to issue SANAS endorsed certificates

Date of Accreditation: January 1999
Certificate valid until: January 2002

Signed:
Executive Officer: SANAS

SCHEDULE OF ACCREDITATION

CERTIFICATION BODY NUMBER: C 03

Address	
South African Bureau of Standards Private Bag X 191 PRETORIA 0001 Tel : (012) 428-6169 Fax : (012) 344-1568	Mr E Julies Signatory Issue No : 1 Date : January 1999

SCOPE

The South African Bureau of Standards complies with the accreditation criteria for certification bodies for environmental management system certification as laid down in ISO/IEC Guide 62.

The SABS is authorised to certify organisations to SABS ISO 14001 in the following industrial sectors:

Aerospace
Agriculture, fishing
Basic metals and fabricated metal products
Chemicals, chemical products and fibres
Concrete, cement, lime plaster etc
Construction
Education
Electrical and optical equipment
Electricity supply
Engineering services
Financial intermediation: real estate, renting
Food products, beverages and tobacco
Gas supply
Health and social work
Hotel and restaurants
Information technology
Leather and leather products
Manufacture of coke and refined petroleum products
Machinery and equipment
Mining and quarrying
Non-metallic mineral products
Nuclear fuel
Other services
Other transport equipment
Pharmaceuticals
Printing companies
Public administration
Pulp, paper and paper products
Recycling
Rubber and plastic products
Textiles and textile products
Transport, storage and communication
Water supply
Wood and wood products

Original date of issue: January 1999 Page 1 of 1

ISSUED BY THE SOUTH AFRICAN NATIONAL ACCREDITATION SYSTEM

Executive Officer: SANAS

Appendix 11: Survey conducted in the South African Textile Industry, and Results

Below is the survey that was conducted amongst companies in the South African textile industry. It was drawn up to gauge the opinion of textile industry role players, on the manufacturing side, on a number of important issues facing the South African textile industry today. It seeks to gather information on attitudes towards a variety of issues, from general trade related issues to environmental concerns and awareness.

The experience amongst a number of persons and organisations actively conducting research in the domestic textile industry has shown that it is generally very difficult to penetrate textile companies, let alone obtain a satisfactory response to surveys. It is not entirely clear whether this apparent "apathy" is a perhaps due to:

- A direct consequence of general suspicion about divulging (sensitive?) company information and / or opinion;
- The general state of the industry;
- A strong degree of secrecy for fear of revealing trade patterns and losing a perceived competitive advantage;
- A simple lack of awareness that surveys are likely to be of benefit to the industry (and by extension the individual company);
- The time factor (in this case little more than 10 minutes)
- The absence of official endorsement and sanction of the survey.

It was attempted to obtain the support the South African Textile Federation (Texfed) in the form of a short covering letter, endorsing the survey. This would have helped in increasing the response rate, and lent a greater amount of perceived importance to the survey. Texfed declined the request, citing the fact that "there are too many surveys for which we provide information and if we 'support' one, we will have to support them all" (Claassens, 2001).

The address database for the survey was drawn up using the Texfed "1999/2000 Index of Textile Federation Members" (Textile Federation, 2000c), official *Yellow Pages* telephone directories and other known textile companies. The total sample size was 97 respondents, of which the response rate was 21 (=21.6%). While this amounts to a low response rate, the possible reasons provided above should be taken into account. The survey was sent to the textile companies by ordinary mail, while most responses were received back by fax.

Not all questions were answered by all respondents. From the responses received, it would generally appear that fewer companies answered those questions that were perhaps deemed to be "too sensitive", or where they may have felt that a particular issue "did not apply to them". It would also appear that the first questions achieved a greater 'response rate' than the last few.

The questions of the survey, and results thereof, can be found below. After each question the following information is provided: number of respondents to that particular question, the number and percentage attributable to each possible answer. In some cases multiple answers were possible, leading to a situation where the percentage totals add up to greater than 100%. Percentages have been rounded to the nearest full number, opening up the possibility of insignificant rounding errors.

The survey was conducted under the following sub-headings:

1. **General / Textile Trade**
2. **Domestic Legislative Environment**
3. **Co-operation in the Textile-Clothing Pipeline**
4. **Labour Issues**
5. **Regional and International Trade Agreements**
6. **Input Costs**
7. **ISO Certification and Eco-Labelling**
8. **Environmental Issues**
9. **Company Profile**
10. **Conclusion**

The survey and detailed bread-down of answers appears on the following pages:

Textile Industry Survey

Please fill in your answers by marking the relevant box with a cross ✗

1. *General / Textile Trade*

1.1

How have trading conditions changed over the past 12 months?

Local:	❑ Easier	❑ Unchanged or N/A	❑ More difficult
Regional:	❑ Easier	❑ Unchanged or N/A	❑ More difficult
International	❑ Easier	❑ Unchanged or N/A	❑ More difficult

Number of responses:	**21**		
Local	1 [5%]	4 [19%]	16 [76%]
Number of responses:	**20**		
Regional	2 [10%]	10 [50%]	8 [40%]
Number of responses:	**18**		
International	2 [11%]	15 [83%]	1 [6%]

1.2

In which areas of trade does your company achieve **significant** sales?
❑ Local ❑ Regional ❑ International

Number of responses:	**21**
Local	21 [100%]
Regional	6 [29%]
International	4 [19%]

1.3

Which areas of trade have **increased** significantly over the past 12 months ?
❑ Local ❑ Regional ❑ International ❑ None

Number of responses:	**18**
Local	7 [39%]
Regional	2 [11%]
International	4 [22%]
None	5 [28%]

1.4

Which areas of trade have **decreased** significantly over the past 12 months ?
❑ Local ❑ Regional ❑ International ❑ None

Number of responses:	**12**
Local	3 [25%]
Regional	2 [17%]
International	0 [0%]
None	7 [58%]

1.5

Where do you foresee the greatest trade opportunities for your company over the next few years?
❑ Local ❑ Regional ❑ International

Number of responses:	**20**
Local	9 [45%]
Regional	3 [15%]
International	8 [40%]

1.6

Are you actively researching international textile markets on an ongoing basis with a view to expanding trade?
❑ Yes ❑ No ❑ In-between

Number of responses:	**20**
Yes	7 [35%]
No	5 [25%]
In-between	8 [40%]

1.7

Is your company a member of an industry organisation (e.g. Texfed) etc?
❑ Yes ❑ No

Number of responses:	**21**
Yes	16 [76%]
No	5 [24%]

1.8

From which countries does your company face most of its competition?
❑ South Africa / Local ❑ Sub-Saharan Africa / SADC ❑ Far East (e.g. China, Indonesia etc.)
❑ US ❑ Europe

Number of responses:	**21**
South Africa / Local	5 [24%]
Sub-Saharan Africa / SADC	1 [5%]
Far East	15 [71%]
US	0 [0%]
Europe	0 [0%]

1.9

How would you describe most of your current product range in terms of value added, specification and target market ?
❑ Lower end of market (e.g. T-shirt material etc., lower value added, highly price sensitive environment)
❑ Middle / in-between
❑ Upper end of market (e.g. technical textiles, high value added, high product differentiation)

Number of responses:	**19**
Lower end	3 [16%]
Middle	13 [68%]
Upper end	3 [16%]

2. *Domestic Legislative Environment*

2.1

Is the South African **manufacturing sector** and **trade** legislation conducive to textile industry growth (e.g. tax incentives etc.) ?
❑ Yes ❑ No ❑ Uncertain

Number of responses:	**20**
Yes	0 [0%]
No	14 [70%]
Uncertain	6 [30%]

2.2

Is the South African **labour** legislation conducive to textile industry growth?
❑ Yes ❑ No ❑ Uncertain

Number of responses:	**21**
Yes	1 [5%]
No	18 [86%]
Uncertain	2 [10%]

2.3

Is the South African **environmental** legislation conducive to textile industry growth?
❑ Yes ❑ No ❑ Uncertain

Number of responses:	**17**
Yes	2 [12%]
No	5 [29%]
Uncertain	10 [59%]

3. *Co-operation in the Textile-Clothing Pipeline*

3.1

Do you co-operate actively with your competitors? ❑ Yes ❑ No
What is the nature of this co-operation? ❑ Trade ❑ Social contact ❑ Information exchange ❑ Other:

Number of responses:	**18**
Yes	4 [22%]
No	14 [78%]

Nature of Co-operation (if **YES** above) – including multiple answers

Number of responses:	**5**
Trade	3 [60%]
Social Contact	1 [20%]
Information Exchange	1 [20%]
Other	0 [0%]

3.2

Do you co-operate actively with your suppliers? ❑ Yes ❑ No
What is the nature of this co-operation? ❑ Trade ❑ Social contact ❑ Information exchange ❑ Other:

Number of responses:	**19**
Yes	19 [100%]

No	0 [0%]

Nature of Co-operation (if **YES** above) – including multiple answers

Number of responses:	**19**
Trade	19 [100%]
Social Contact	5 [26%]
Information Exchange	15 [79%]
Other	2 [11%] Workshops(1); Trade shows (2)

3.3

Do you co-operate actively with your clients? ❑ Yes ❑ No
What is the nature of this co-operation? ❑ Trade ❑ Social contact ❑ Information exchange ❑ Other:

Number of responses:	**19**
Yes	19 [100%]
No	0 [0%]

Nature of Co-operation (if **YES** above) – including multiple answers

Number of responses:	**19**
Trade	19 [100%]
Social Contact	7 [37%]
Information Exchange	16 [84%]
Other	0 [0%]

4. *Labour Issues*

4.1

How do you view the role that the South African Clothing and Textile Union (SACTWU) is playing in the South African textile industry? Please explain briefly:

Responses: **"Non-cooperative; has improved in previous 2 years; destructive; mischievous; increased maturity as is grasping some of the vital issues"**

4.2

Are the staff at your company unionised?
❑ Yes ❑ No ❑ Partially

Number of responses:	**17**
Yes	10 [59%]
No	2 [12%]
Partially	5 [29%]

4.3

How is your company's working relationship with SACTWU?
❑ Constructive / Good ❑ Average / Neutral ❑ Un-constructive / problematic

Number of responses:	**14**
Constructive	2 [14%]
Average	8 [57%]
Problematic	4 [29%]

5. *Regional and International Trade Agreements*

5.1

What impact do you think the following FTAs (Free Trade Agreements) will have on the South African textile industry?

SADC FTA	❑ Positive	❑ Negative	❑ Uncertain	Reason_____
European Union FTA	❑ Positive	❑ Negative	❑ Uncertain	Reason_____
Africa Growth and Opportunity Act (AGOA)	❑ Positive	❑ Negative	❑ Uncertain	Reason_____

SADC FTA

Number of responses:	**18**
Positive	3 [17%]
Negative	9 [50%]
Uncertain	6 [33%]

European Union FTA

Number of responses:	**18**
Positive	7 [39%]
Negative	1 [6%]
Uncertain	10 [56%]

U.S. African Growth and Opportunity Act (AGOA)

Number of responses:	**17**
Positive	12 [63%]
Negative	2 [11%]
Uncertain	5 [26%]

5.2

Which of these agreements is likely to have the greatest positive impact on your company?
❑ SADC FTA ❑ EU FTA ❑ Africa Growth and Opportunity Act (AGOA)

Number of responses:	**13**
SADC FTA	2 [15%]
E.U. FTA	3 [23%]
AGOA	8 [62%]

Please describe briefly some of the steps your company is intending to take in order to obtain maximum benefit out of the above-mentioned trade agreements: Answer:_____

Responses: **"contact local chamber of commerce to refer to potential clients; internet research; contacting DTI; visiting the US to meet with potential clients; talk to *Wesgro*; contact with SATIEC"**

6. *Input Costs*

6.1

Which input costs (e.g. water, electricity, raw materials, finance charges, labour costs) have increased significantly (in Rand terms) over the past 12 months? Answer:_____

Responses: **"interest costs, labour costs (incl. due to absenteeism); electricity; raw materials (esp. wool"**

6.2

Which of the following are significant input costs in your company's textile and related production processes?
❑ Water ❑ Electricity

Number of responses:	**15**	**(multiple answers possible)**
Water	4 [27%]	
Electricity	12 [80%]	

7. *ISO Certification and Eco-Labelling*

7.1

Has your company obtained ISO 9000 (quality) certification or is considering obtaining it?
❑ Yes ❑ Seriously considering it ❑ Not considering it at present
Reasons for / against obtaining certification (e.g. financial feasibility, benefits)_____

Number of responses:	**16**
Yes	2 [13%]
Considering it	2 [13%]
No considering at present	12 [75%]

Reasons **"not financially feasible; no dedicated personnel available; not demanded by market"**

7.2

Has your company obtained ISO 14000 (environmental) certification or is considering obtaining it?
❑ Yes ❑ Seriously considering it ❑ Not considering it at present
Reasons for / against obtaining certification (e.g. financial feasibility, benefits)_____

Number of responses:	**12**
Yes	0 [0%]
Considering it	2 [17%]
Not considering at present	10 [83%]

Reasons **"not financially feasible; no market demand; too inflexible; can't pass price on to client"**

7.3

Has your company obtained any other recognised certification for some or all of its **textile** products?
❑ Yes ❑ No ❑ Please list:_____

Number of responses:	**8**
Yes	6 [75%]
No	2 [25%]

Responses **"Öko-Tex (1); SABS marks (6)**

7.4

Are you aware of the existence of **environmental** labels / eco-labels in the textile industry?
❑ Yes ❑ No ❑ Please list:_____

Number of responses:	**16**
Yes	13 [81%]
No	3 [19%]

Responses **"Öko-Tex (4), EU flower (4)"**

7.5

Have local or international clients of your company requested your company to conform with any eco-labelling specifications?
❑ Yes → ❑ Local and / or ❑ International
❑ No

Number of responses:	**16**
Yes	2 [13%] – (international only)
No	14 [88%]

7.6

Does your company use (or is planning to use) eco-labelling as a tool to increase sales?
❑ Yes ❑ Planning / considering to use in short to medium term ❑ No

Number of responses:	**16**
Yes	1 [6%]
Planning / Considering	3 [19%]
No	12 [75%]

7.7

If planing / considering, which eco-labelling scheme are you planning to introduce to your company?
Please list:_____ ❑ Uncertain

Number of responses: **3**

Responses: **"EU label (3); Öko-Tex (1)"**

7.8

If planing / considering, are you expecting the benefits from eco-labelling through greater **local** or **export**-market penetration?
❑ Local markets ❑ Export markets (please list) ❑ Both

Number of responses:	**3**	**(multiple answers possible)**
Local	0 [0%]	
Export Markets	3 [68%]	
Both	1 [33%]	

Responses: **"European markets (3)"**

8. *Environmental Issues*

8.1

Are environmental issues relevant to the South Africa textile industry?
❑ Yes ❑ No ❑ Uncertain

Number of responses: **19**

Yes	14 [74%]
No	0 [0%]
Uncertain	5 [26%]

8.2

Do you believe that the South African textile industry poses a significant threat to the environment?
❑ Yes ❑ No ❑ Uncertain

Number of responses:	**19**
Yes	1 [5%]
No	16 [84%]
Uncertain	2 [11%]

8.3

Has your company been exposed to any environmental pressure and / or demands?
❑ Yes ❑ No ❑ Uncertain

Number of responses:	**19**
Yes	3 [16%]
No	15 [79%]
Uncertain	1 [5%]

8.4

If **YES**, from which sources?
❑ Municipality / metropolitan council ❑ Provincial Government ❑ National Government ❑ Suppliers
❑ Regional / National Clients ❑ International Clients ❑ Waste Minimisation Clubs ❑ Consultants

Number of responses:	**3**	**(multiple answers possible)**
Municipality	3 [100%]	
International Clients	1 [33%]	
Waste Min. Clubs	1 [33%]	
Consultants	2 [67%]	

8.5

If **NO**, do you anticipate environmental pressure from any of the above in the short to medium term?
❑ Yes ❑ No ❑ Uncertain

Number of responses:	**14**
Yes	4 [29%]
No	6 [43%]
Uncertain	4 [29%]

8.6

If environmental pressure and / or demands have emanated from **clients**, please specify further:
❑ Local End-consumers ❑ International End-consumers ❑ /Local Retailers ❑ International Retailers / Clothing Ind.

Number of responses:	**1**
Int. Retailers / Clothing Industry	1 [100%]

9. *Company Profile*

9.1

In which region is your company located?
❑ Western Cape ❑ KZ-Natal ❑ Gauteng ❑ Mpumalanga ❑ Northern Province
❑ Northern Cape ❑ Eastern Cape ❑ North-West

Number of responses:	**20**
Western Cape	9 [50%]
KZ-Natal	7 [35%]
Gauteng	3 [15%]
Eastern Cape	1 [5%]

9.2

Into which category does your company fall in terms of the number of employees?
❑ Micro (< 10) ❑ Small (<50) ❑ Medium (<250) ❑ Large (>250)

Number of responses:	**18**
Micro	0 [0%]
Small	7 [39%]
Medium	8 [44%]
Large	3 [17%]

10. *Conclusion*

10.1

In your view, which are the 5 greatest threats to the South African textile industry?
Please list: (1) (2) (3) (4) (5)

Responses: **" cheap imports; illegal imports; restrictive labour laws; crime; distance from international markets; lack of support structures; economic conditions"**

In your view, which are the 5 greatest opportunities open to the South African textile industry?
Please list: (1) (2) (3) (4) (5)

Responses: **" good quality, price, weak currency; short lead times and ability to do low minimum volumes"**

Thank you very much for your time and co-operation, your assistance is greatly appreciated. *The results of this survey will be used purely for research purposes, and are likely to be beneficial for the South African textile industry as a whole.*

Name and Postal Address:

E-mail Address:

PLEASE POST THIS SURVEY BACK TO: ☞ **OR FAX TO 021 – 674 4022**

Eckart Naumann,
6 Chamonix,
Blackheath Rd

Kenilworth 7708

Appendix 12: Principles of the WRAP Scheme

The following are the principles behind the Worldwide Responsible Apparel Production (WRAP) Certification Program, as published on the WRAP website www.wrapapparel.org (WRAP, 2001b):

The WRAP Principles are core standards for production facilities participating in the Worldwide Responsible Apparel Production Certification Program. The Program's objective is to independently monitor and certify compliance with these socially responsible global standards for manufacturing, and ensure that sewn products are produced under lawful, humane and ethical conditions. Participating companies voluntarily agree that their production and that of their contractors will be certified by the **WRAP Certification Program** as complying with these standards. The WRAP program is endorsed by a number of association in various countries, including (WRAP, 2001a):

American Apparel & Footwear Association; Asociación Dominicana de Zonas Francas, Inc.; Asociación Salvadoreña de la Industria de la Confeccion; Association des Industries d'Haiti; Asociación Hondureña de Maquiladores; Camara Nacional de la Industria del Vestido (Mexico); Comisión Nacional de Zonas Francas (Nicaragua); Caribbean Latin American Action; **Clothing Federation of South Africa**; Confederation of Garments Exporters of the Philippines, Inc.; Jamaica Apparel Institute

Principles of WRAP:

- **Laws and Workplace Regulations** - Manufacturers of sewn products will comply with laws and regulations in all locations where they conduct business.

- **Prohibition of Forced Labour** - Manufacturers of sewn product will not use involuntary or forced labour indentured, bonded or otherwise.

- **Prohibition of Child Labour** - Manufacturers of sewn product will not hire any employee under the age of 14, or under the age interfering with compulsory schooling, or under the minimum age established by law, whichever is greater.

- **Prohibition of Harassment or Abuse** - Manufacturers of sewn product will provide a work environment free of harassment, abuse or corporal punishment in any form.

- **Compensation and Benefits** - Manufacturers of sewn product will pay at least the minimum total compensation required by local law, including all mandated wages, allowances and benefits.

- **Hours of Work** - Manufacturers of sewn product will assure that hours worked each day, and days worked each week, shall not exceed the legal limitations of the countries in which apparel is produced. Manufacturers of sewn product will provide at least one day off in every seven-day period, except as required to meet urgent business needs.

- **Prohibition of Discrimination** - Manufacturers of sewn product will employ, pay, promote, and terminate workers on the basis of their ability to do the job, rather than on the basis of personal characteristics or beliefs.

- **Health and Safety** - Manufacturers of sewn product will provide a safe and healthy work environment. Where residential housing is provided for workers, apparel manufacturers will provide safe and healthy housing.

- **Freedom of Association** - Manufacturers of sewn product will recognise and respect the right of employees to exercise their lawful rights of free association, including joining or not joining any association.

- **Environment** - Manufacturers of sewn product will comply with environmental rules, regulations and standards applicable to their operations, and will observe environmentally conscious practices in all locations where they operate.

- **Customs Compliance** - Manufacturers of sewn product will comply with applicable customs law and, in particular, will establish and maintain programs to comply with customs laws regarding illegal transshipment of apparel products.

- **Drug Interdiction** - Manufacturers of sewn product will cooperate with local, national and foreign customs and drug enforcement agencies to guard against illegal shipments of drugs.

Appendix 13: Contact Details of Persons directly communicated with or interviewed

Organisation	Location	Representative	e-mail (if available)
BECO Inst. For Sust. Business	Cape Town	Bas Kothuis MD	bkothuis@beco.co.za
Brits Textiles	Atlantis / Western Cape	Kim Capstick-Dale MD	
Clofed	Johannesburg	Paul Theron	Info@clofed.co.za
Clotex	Cape Town	Adriaana Scholtz	Clotex@intekom.co.za
Coastal Textiles	Hammarsdale / KZN	Mike Donegan MD	Mdonegan@coastal.co.za
Cotton South Africa	Pretoria	Hennie Bruwer, CEO Hein Schroeder, Quality Control Manager	henniebruwer@cottonsa.org.za
CSIR	Port Elizabeth Johannesburg	Rob Gardiner; Steve Chapple	Rgardin@icon.co.za Schapple@csir.co.za
DeNim Textiles	Hammarsdale / KZN	Steve Prosser Sales Manager	
DANCED	Cape Town / Pretoria	Karen Lundbo Cleaner Textile Production Project	Daeczi@iafrica.com
DTI	Pretoria	Keryn House (Former) Director: Textiles, Clothing, Footwear	Kerynh@dti..pwv.gov.za
	Cape Town	Dave Kaplan Chief Economist	Dkaplan@dti.pwv.gov.za
European Union Commission	Belgium	Antonia Buchbinder Eco-Label Helpdesk	Ecolabel@cec.eu.int
Frame Fabrics	Cape Town / New Germany	Dennis Friedman CEO	Dennis.friedman@frame.co.za
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